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Internal Derangements of the Knee

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ANATOMY OF THE KNEE

The knee joint is potentially one of the weakest joints of the body, from the standpoint of bony structure. The articular facets of the upper end of the tibia are mere shallow depressions, deepened somewhat by the semi-lunar cartilages, which form but a poor receptacle for the lower tuberosities of the femur. This is in sharp contrast to the other large joints of the lower extremity, namely the hip and ankle, the one a deep ball and socket joint, the other a well constructed mortise and tenon. To compensate for this potential weakness, the knee is stabilized and fortified by a complete envelopment of extremely dense ligaments, which serve capably to maintain the integrity of the joint under all ordinary stress.

For purposes of discussion, these ligaments may be divided into several more or less distinct groups: 1. Internal lateral ligament. This structure encompasses the entire mesial aspect of the joint, being attached above to the margin of the mesial condyle of the femur, below to the margin of the upper end of the tibia. It is intimately connected to the capsule of the joint, and indistinguishable from it. It is also closely attached to the internal semilunar cartilage. 2. External lateral ligament. This structure is a definite ligamentous band in two sections, the anterior and posterior, and passes from the external condyle of the femur to the head of the fibula. It is distinct from and but loosely attached to the capsule of the joint, and thus has no connection with the external semi-lunar cartilage. 3. Posterior ligament. This structure is a fascial and capsular thickening, with interdigitating fibers strongly supporting the joint posteriorly. 4. Anterior crucial ligament. This structure is intra-articular, running from the front of the spine of the tibia as a pencil-sized band, backward, upward and outward, to insert in the mesial side of the lateral condyle of the femur posteriorly. It effectively checks forward displacement of the tibia on the femur, and is taut on complete extension of the knee. 5. Posterior crucial ligament. This is a thick, short ligament, running from the posterior part of the spine of the tibia obliquely upward, forward and inward, to attach to the outer side of the medial condyle of the femur. It serves to check posterior displacement of the tibia on the femur, and is most taut on flexion. These two ligaments acting together tend to limit rotation of the tibia on the femur. 6. Internal and external semi-lunar cartilages. These are crescentic slips of cartilage, thick on the outer border, and thinning toward the joint, and closely attached to the margin of the articular surface of the tibia and the capsule of the joint. Thus the internal meniscus is fixed to the internal lateral ligament, while the lateral is more freely movable, being attached only to the capsule of the joint. They serve to prevent lateral motion of the joint by their wedge action, and also deepen slightly the articular facets of the tibia. Altogether these

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structures serve to stabilize the joint, and prevent undue rotation and lateral motion, while allowing flexion and extension.

Injuries

With this brief consideration of the anatomy of the more important structures of the knee, let us correlate injury and anatomy in a rational discussion of traumatic internal derangements of the knee joint.

Although there are a multitude of various injuries to the mechanism of the knee, many of these are so infrequent as to be negligible in a brief discussion of this sort. Investigation of case series reveals that about 75 per cent of the injuries to the knee consist of injury to the internal or external lateral ligament or its corresponding cartilage. This leaves a comparatively small percentage to include injury to the crucial ligaments, fracture of the tibial spines, loose bodies, injured fat pads and major fractures. For this reason the major portion of this discussion will be confined to the more common injuries, namely, lateral ligament and cartilage injuries, with only a brief description of the more uncommon ones.

I.—Injury to the internal lateral ligament.

A. Etiology.

The mechanism of production of an injury to this structure is a forced abduction of the leg at the knee, and external rotation of the leg on the thigh, with the knee slightly flexed. Usually the foot is fixed, and the knee is forced mesially, with the thigh and body rotating inward.

B. Pathology.

Partial or complete severance of the fibers of the ligament at either insertion or of the body of the ligament itself. A continuation of the force will dislocate or rupture the internal semi-lunar cartilage, and a further continuation will injure the crucial ligaments.

C. Symptoms and diagnosis.

1. History of the type of injury.
2. Severe pain over the ligament, with a sensation of the knee "giving away."
3. Effusion into the joint, which depends upon the severity of the injury to the ligament.
4. Local tenderness over the site of rupture.
5. Pain on external rotation of the tibia, with the knee flexed.
6. Pain on passive abduction of the leg at the knee.
7. Increase in lateral motion if the ligament is entirely ruptured.

D. Complications.

1. Dislocation of the internal semilunar cartilage, with symptoms of cartilage injury.
2. Avulsion of the tibial spine.
3. Injury to the crucial ligaments.
4. Fracture of the tibia or femur.

E. Treatment.

The treatment of injury to the internal lateral ligament depends to a large extent upon the severity of the injury and the presence of complications. It is unfortunately true that the major portion of these injuries are very inadequately treated. A great number of knee injuries which result in instability of the knee, with a so-called "game knee," can be prevented by adequate treatment, instituted early. In too large a proportion of cases the doctor is not consulted until permanent damage has been done. In many other cases, however, the doctor tends to minimize the injury, encouraging early weight bearing and active and passive motion, to the marked detriment of the injured structures. The rational of the treatment depends entirely upon the pathology. In the presence of a ruptured ligament, it is obvious that complete rest should be maintained until union is complete, if we are to prevent a relaxed, redundant ligament, with resulting instability. If the patient is seen early, the treatment consists of:

1. Absolute bed rest.
2. Application of alternate heat and cold to the knee.
3. Snug bandage to prevent effusion.
4. Aspiration of effusion into knee

as frequently as is necessary to prevent undue tension. Strict asepsis is imperative.

5. After the effusion is under control a plaster cast should be applied from the toes to the groin. In about 10 days the cast may be bivalved for the institution of heat and massage, but *not* motion. This immobilization should be continued for from three to six weeks, depending upon the severity of the injury. The patient may then be allowed up with a snugly fitting elastic bandage to the knee, and the inner side of the sole and heel of the shoe raised ¼ inch, in order to relieve the strain on the internal lateral ligament.

II.—Injury to the external lateral ligament.

Injury to the external lateral ligament is much less common than injury to the internal lateral ligament. The method of production is practically the reverse of that causing injury to the internal lateral ligament, and the injury is such that the leg is *internally* rotated on the thigh, and *adducted* at the knee joint, while the knee is in slight flexion. It can readily be seen that this is a much less common type of injury than the former. The symptoms of this injury are practically the same as those of injury to the internal lateral ligament, except localizing signs are over the external lateral ligament.

A. History of the type of injury.

B. Severe pain over the external lateral ligament.

C. No effusion into the joint, unless the injury is very severe, since the ligament and capsule of the joint are separate.

D. Local tenderness over the site of injury.

E. Pain on passive *adduction* at the knee.

F. Pain on *internal rotation* of leg.

G. Possibly increased lateral motion of the knee if the injury is severe.

Treatment is identical to that of treatment of internal lateral ligament, except that when weight bearing is permitted the *external* portion of the sole and heel of the shoe is raised, rather than the internal.

III.—Injuries to the internal semi-lunar cartilage.

Injuries to the internal semi-lunar cartilage are much more common than injuries to the external, the proportion being about nine to one. This is due to the fact that the internal lateral ligament is integral with the capsule of the joint, and the internal semi-lunar cartilage is in turn attached to the capsule, while on the outer side of the knee there is no connection between cartilage and ligament.

A. Etiology.

The mechanism of production is identical with that of injury to the internal lateral ligament, that is, with the knee slightly flexed the foot is fixed and the body weight is thrown inward and rotated inward, throwing a strain directly on the internal lateral ligament. This procedure rotates the anterior portion of the cartilage backward and inward, and the posterior part of the cartilage backward and outward.

B. Pathology.

This may do one of several things to the cartilage:

1. The cartilage may be torn loose at its front attachment.
2. The cartilage may be ruptured in the central portion.
3. The cartilage may be split longitudinally, "bucket handle" type.
4. The posterior segment of the cartilage may be caught in the articulation when the joint is straightened, thus rupturing the cartilage.

Any one of these injuries may permit the cartilage to slide into the joint, and thus lock the knee on attempted extension.

C. Symptoms.

1. Following the acute injury.
   a. History of the type of injury.
   b. Pain on attempted extension of leg.
   c. Inability completely to extend the knee without first manipulating the leg.
   d. Pain over the anterior at-

tachment of the semi-lunar cartilage.

e. Swelling and effusion of the knee joint.

2. Diagnosis of an old cartilage injury.

a. History of acute onset.

b. Synovitis of the knee.

c. Pain over the detached cartilage, especially anteriorly.

d. Locking of the joint repeatedly.

e. Pain on abduction at the knee.

f. Pain on external rotation of the leg on the thigh, with the knee flexed.

g. Pain on forced extension of the knee.

h. Recurrent effusion following each successive locking.

D. Treatment.

There is a good deal of debate as to the proper procedure in a recent case of injury to the semi-lunar cartilage. There should be no question, however, but that following the first attack the treatment should be conservative.

1. Conservative treatment.

a. Complete reduction of the displacement. With or without an anesthetic the knee is completely flexed. Then abduct the leg at the knee and externally rotate the leg, while rapidly extending the leg on the thigh. If the patient is not under an anesthetic, he should be required to kick down at the time of this extension. If reduction is complete, the leg can be easily and painlessly extended to an equal degree with the opposite leg.

b. After reduction, complete immobilization of the knee for from four to six weeks, preferably by a plaster cast running from the toes to the groin.

c. Elastic support following removal of the cast, or a brace to protect knee.

d. Elevate the inner side of the heel and sole of the shoe about ¼ inch.

2. Surgical treatment.

If the patient gives a history of repeated attacks, it is advisable to remove the cartilage. This requires the strictest asepsis, and most careful technique. There seems to be no particular handicap to the knee following removal of the semi-lunar cartilage. Cases that have been re-operated for some other involvement of the knee reveal that the cartilage is replaced with a formation of fibrous tissue, which seems to satisfactorily fulfill the function of the internal semi-lunar cartilage.

IV.—Injuries to the external semi-lunar cartilage.

This condition is much less common than injuries to the internal semi-lunar cartilage, the exact mechanism of production being rather indefinite. A great many cases of injury to the internal semi-lunar cartilage may have symptoms referable to the outside of the knee. For this reason one must be particularly careful in making a diagnosis of injury to the external semi-lunar cartilage alone. The conservative management of the two conditions is identical, so the exact diagnosis of course is not essential. Should the case go to operation, however, it is inadvisable to approach the external cartilage through a small incision, but is essential to use an approach which will permit exploration of both cartilages, in order to assure removal of the site of the trouble.

V.—Injuries to the anterior crucial ligament.

We have seen that the principal function of the crucial ligaments is to stabilize the knee antero-posteriorly, the anterior crucial ligament checking anterior displacement of the tibia on the femur, the posterior checking posterior displacement of the tibia on the femur. The anterior crucial ligament, however, also serves to check abduction at the knee and internal rotation of the leg on the knee.

A. Etiology.
   1. Forcible hyper-extension at the knee.
   2. Forced hyper-abduction at the knee.
   3. Forced internal rotation of the tibia on the femur.

   It can be seen that the anterior crucial ligament is likely to be injured only after severance of the internal lateral ligament, and displacement of the internal semi-lunar cartilage. A continuance of the force then either ruptures the anterior crucial ligament or fractures the tibial spine.

B. Pathology.
   1. Rupture of the ligament proper.
   2. Avulsion of the tibial spine.
   3. Tearing loose of the ligament from the femoral attachment.

C. Symptoms.

   We have the symptoms of a severe injury to the knee joint, with all the findings referable to injury to the internal lateral ligament. In addition, there is definite lateral instability of the knee, and also instability in the antero-posterior plane. That is, with the knee extended, the tibia may be displaced somewhat anteriorly upon the femur.

D. Treatment.

   This condition requires prolonged immobilization of the joint. Following an acute injury it may be advisable to institute some preliminary treatment in the way of reducing the swelling and effusion, prior to immobilization. This can be accomplished by hot and cold applications and aspiration of the joint while the patient is at bed rest. Following this the knee should be completely immobilized in a plaster of paris cast, preferably from the toes to the groin, with the knee at about 30 degrees flexion. After about two months in the cast, it is sometimes permissible to apply a cast from the ankle to the groin in the same position, and allow weight bearing. Immobilization should be complete for about six months. Following this a brace should be worn, which limits extension at the knee to about 160 degrees. This should be worn for another two to six months, during which time physiotherapy should be instituted, consisting of heat, massage, and active and passive motion. Operative treatment is gaining popularity and is indispensable in any but the most acute cases. It will often shorten the period of convalescence.

VI.—Rupture to the posterior crucial ligament.

A. Etiology.
   1. Forcible backward displacement of the tibia on the femur. This is an unusual type of injury, and occurs with the knee flexed. It requires very serious injury to rupture the posterior crucial ligament.

B. Pathology.
   1. Rupture of the fibers of the crucial ligament.
   2. Fracture of the tibial spine.
   3. Tearing loose of the attachment of the ligament to the femur.

C. Symptoms.

   In a case of this kind, we have the symptoms of a very serious injury to the knee, with swelling, effusion, dysfunction and severe pain. The cardinal sign of rupture of the posterior crucial ligament is the ability to displace the tibia posteriorly on the femur, with the knee flexed. In the majority of cases many other structures of the knee are injured as well, diagnosis being based entirely on antero-posterior instability.

D. Treatment.

   The treatment is identical with that of injury to the anterior ligament. Care must be taken in the application of the cast that the tibia is well forward on the femur. The prognosis in primary injuries to the crucial ligaments is at best doubtful. In many cases there will be a resulting instability at the knee joint. It is unquestionably true, however, that a large proportion of this disability can be minimized by early

adequate treatment. Since the operative treatment is unsatisfactory, it renders the initial period of treatment much more important, since there is little or no recourse if the liagament is allowed to heal with increased length, resulting in instability.

VII.—Fracture of the tibial spine.

This condition is probably much more common than has been suspected. Careful X-ray of the knee will oftimes reveal a fracture of the tibial spine, in cases where ligament injury only has been suspected.

A. Etiology.

The mechanism of production of this injury is identical with that of rupture of the anterior crucial ligament. There are of course many cases of major fractures around the knee in which the tibial spine is involved, but these cases are beyond the realm of this discussion.

B. Symptoms.

The symptoms are the same as those of rupture of the crucial ligaments. In some cases, however, there is not increased mobility, since the spine is not completely torn loose. In certain other cases there is sufficient displacement of the spine to cause actual locking of the knee, and this is in the nature of a bony block, rather than the cartilaginous locking incident to injury to the semilunar cartilage. All severe injuries to the knee joint should have careful X-ray study, and this will reveal fractures of the tibial spine.

C. Treatment.

1. If there is bony block, this must be eliminated by manipulation of the knee under an anesthetic. If this fails, the knee must be opened and the bony block removed in toto.
2. Preliminary period, during which time the swelling and effusion of the knee is reduced.
3. Complete immobilization of the knee by a plaster cast from the toes to the groin, with the knee slightly flexed. It is not usually necessary to immobilize the knee over so prolonged a period in fracture of the tibial spine as in rupture of the crucial ligaments, six to eight weeks probably being sufficient.

Conclusion

In conclusion, then, let me make a plea for early and adequate treatment of injuries about the knee. In all of these injuries there is a tremendous advantage in early care. Many times satisfactory treatment cannot be instituted late with any degree of success. With careful examination, prompt, accurate diagnosis, and immediate adequate care the percentage of disability resulting from intrinsic injuries to the knee can be sharply reduced.

The Management of Pulmonary Tuberculosis

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In dealing with the management of pulmonary tuberculosis, the time-worn subject of early diagnosis is of too great importance to pass without mentioning. The present high death rate in tuberculosis is largely dependent upon two factors; first, failure to make the correct diagnosis while the condition still has a favorable prognosis; and second, failure to use the methods of treatment which will, when used properly, offer the best chance for cure and at the same time markedly shorten the length of convalescence.

Failure to make a diagnosis early is not necessarily incompetence on the part of the attending physician.

Often the patient does not consult a doctor until this stage is passed. Sometimes the internist sees only infrequent cases of tuberculosis and consequently is not always tuberculosis-minded.

Then, too, there are moderately advanced cases with indefinite symptoms and obscure physical signs in which the X-ray film alone will tell the true story. It is conceded by all phthisiologists that the X-ray is today the greatest single guide in the detection and management of cases of pulmonary tuberculosis.

The physician should always and forever be l o o k i n g for early tuberculous lesions, and without exception any and every p a t i e n t presenting himself with either a history or physical signs, or both, that s u g g e s t in any way tuberculosis should have an X-ray of the lungs.

It is not within the scope of this paper to go into the signs and symptoms of tuberculosis; however, we want to invite your attention to this fact: all tuberculosis does not begin insiduously and progress as a chronic disease.

Not infrequently, the disease begins with symptoms of an acute illness, and often is mistaken for lobar-pneumonia.

In fact, it may be a tuberculous pneumonia, and have all the signs and symptoms of a pneumococcic or streptococcic disease.

If it be a tuberculous process, however, it will not clear up so rapidly nor so c o m p l e t e l y as a pneumococcic pneumonia; therefore, every patient having a slowly resolving pneumonia with a continued productive cough and a low grade temperature after the acute sypmtoms have subsided should have not one, but many, sputum examinations for tubercle bacilli, and an X-ray of the chest.

More frequently than this, there is a type of tuberculosis which begins acutely but less dramatically and is erroneously called influenza, cold in the chest, or bronchitis. Here, also, it is our conviction that every patient with these symptoms which fail to clear up as readily as we are justified in expecting, should also have the same careful examination.

If these procedures are followed, a large number of patients will be spared much suffering; and often unnecessary deaths will be prevented.

Furthermore, a patient who has had a pulmonary hemorrhage and, after a few days rest in bed, is returned to work without an X-ray of the chest has been grossly mistreated. Yet such a gross omission as this is no greater than relying on bed rest over an indefinite period of time without consideration as to the need of local rest; by local rest we mean some form of collapse therapy.

The clinical material which serves as a basis for this paper is drawn from a private group practice of many years in a community which is a mecca for tuberculous patients and from the Southern Pacific Tuberculosis Sanatorium, a 100 bed institution located in Tucson. In this institution and in our p r i v a t e practice, strictest bed rest is enforced, but it is not relied upon solely.

In this Sanatorium we have an average of 70-80 per cent of our p a t i e n t s under some form of collapse therapy, and at intervals that percentage has risen above 80 per cent. It is often attempted in those patients who appear hopeless at the start, and we have frequently benefitted and sometimes even secured an arrested disease in patients whose outcome, without such help, would be fatal.

Collapse therapy in all types of pulmonary tuberculosis is the greatest boon that has come to the tuberculous patient since the principles of bed rest and good food were generally accepted as fundamental in the treatment of this disease.

It is our serious conviction that in certain cases of pulmonary tuberculosis, particularly those with c a v i t i e s, collapse therapy is just as much indicated as surgery is in acute appendicitis; because without this, their hope of ultimate cure is greatly lessened.

The absence of acute symptoms and the tragic demise of the patient makes us none the less responsible than if we were to permit a patient with an acute appendicitis to go without surgery.

There are many beautiful stories of early recoveries from bed rest alone. We have all seen them. No one is more convinced than we are that complete bed rest is the fundamental and the most essential prin-

ciple in the treatment of this disease. Our purpose is to show that it should not be depended upon solely.

Very little has been said by the advocates of bed rest without collapse therapy of those patients who have extensions in the same and in the contralateral lung, as well as in other organs, while the patient is at rest in bed. Neither do they write about those who have cavities to form and those who have hemorrhages from these cavities; we hear no one taking credit for the case with an open cavity who, because of a continued positive sputum, is a menace to every one with whom he is in contact.

We hear little of the patient who, by waiting for bed rest to cure him, has had pleural adhesions to form and has, therefore, lost forever his opportunity for a successful pneumothorax.

Different forms of collapse therapy will be enumerated in the order of the frequency of their use: (1st) pneumothorax, (2nd) phrenic interruption (temporary and permanent), (3rd) intrapleural pneumonolysis, (4th) extrapleural pneumonolysis, (5th) scalenotomy, (6th) oleothorax, (7th) intercostal neurectomy, (8th) thoracoplasty (partial and complete).

This group of procedures can be used separately, collectively, or successively; and we want here to advocate and emphasize the principle of using them as successive steps until cavities have been collapsed, and the patient has been rendered free of sputum and bacilli.

In other words we feel that the only way that the best interest of the patient can be served is to start the use of collapse therapy with one object in view — placing the disease process at rest even if all of these procedures are required.

If the first procedure is not successful in accomplishing this, then an additional one or more of these methods is to be used in conjunction with or as a subsequent procedure until absolute collapse with arrest of the disease has occurred.

We feel that the use of surgery early in the disease is often overlooked. Many men are coming more and more to look upon collapse as a valuable adjunct in the treatment of tuberculosis, but too often they use it as a last resort. So often the waiting is the one thing that changes a patient from a hopeful to a hopeless case.

One should always have in mind those dangers of delay which have been pointed out earlier in this paper.

Our methods of procedure of studying and handling patients can best be illustrated by following a patient into the Southern Pacific Sanatorium. When a patient enters this institution and when his history, physical examination, laboratory studies, and X-ray films are completed, his case is presented before the Staff.

Depending upon the duration of the disease, the amount of involvement, the location of the lesions, the amount of previous rest he has had, and how he has reacted to it, the decision is made as to what therapeutic measures will be instituted at this time. If the disease is of short duration, minimal in character, and he has had no previous rest, he may be put on complete bed rest for a period of 30 to 60 days, when he is studied again. Then if there is not ample evidence that there is a retrogression of the lesion, immediately help is given him by some form of collapse therapy.

On the other hand, if the disease is more advanced, if he has had a previous period of bed rest with evidence of a progressing disease process, especially if he has open cavity, then we immediately begin to supplement his bed rest with collapse therapy. We consider an open cavity is always a menace to the patient, and the patient who has a cavity remaining open is always regarded as being in jeopardy. Consequently in cavity cases collapse in some form is always undertaken at once.

Pneumothorax

Pneumothorax is usually the first thought in collapse therapy and is indicated wherever the disease is sufficiently advanced to justify collapse therapy. The selective, or more properly, ideal pneumothorax is that which collapses the diseased area only and allows the healthy lung to continue to function; in early cases, it is the one which is most desirable.

At the present time there are ample figures to prove that in collapse by pneumothorax, for instance, the cures are in

direct proportion to the amount of collapse the patient receives.

Therefore, where, on account of adhesions, a complete collapse is impossible, a Jacobeus operation or some other method should be used to cut the adhesions; if this is impractical a phrenic interruption may be effective.

It is a deplorable fact that many cases of unilateral pneumothorax with a good contralateral lung, where only partial collapse has been obtained, have been and are being kept up without any other procedures being instituted, while the patient with his open cavity progresses gradually until death. This is also true of phrenic interruption.

Pneumothorax has the advantages that it can be continued either unilaterally or bilaterally, or discontinued on one or both sides when the symptoms indicate the necessity.

Contrary to the once popular opinion, the use of pneumothorax in bilateral tuberculosis does not necessarily aggravate the condition in the contralateral lung. More often a good collapse of the lung with the more advanced lesion, by a diminution in the general toxicity and probably a transference of pressure through the mediastinum, allows the opposite lung to improve. This is so commonly seen that we do not feel that bilateral lesions constitute a contra-indication to pneumothorax, but rather an added indication.

Furthermore, in cases with bilateral disease when the better lung fails to improve, while its opposite has been collapsed by pneumothorax, we have no hesitancy in instituting pneumothorax bilaterally, or a phrenic interruption on the side with the better lung.

Vital capacity studies are important in such cases.

Pneumothorax, when it accomplishes complete collapse is successful in producing a cure in about 80 per cent of the cases of unilateral involvement, and a smaller percentage in bilateral disease.

A difficult problem for decision is the length of time pneumothorax should be continued.

Usually the patient is loath to give up the thing which he feels has saved his life —the attending physician is usually in accord with him. The decision is made by consideration of the pathology that was present when the pneumothorax was instituted and the present X-ray appearance of the lung. In general, we may assume that a successful pneumothorax will have accomplished its purpose in two to two and one-half years, if cavity were present at time of its induction, and sooner if there were no cavity. Furthermore the compressed lung is capable of expanding and resuming its function in most cases, which are not collapsed for longer periods.

Complications

There are two serious complications to pneumothorax; (1) spontaneous collapse, and (2) development of an effusion which may later become purulent. The spontaneous collapse is always looked upon as serious. Some may survive without any interference—we had one patient who had three separate spontaneous collapses. It never became necessary to interfere on any occasion, and he is well today. This is the exception. More often the air must be aspirated, and if this is not sufficient, a small catheter is introduced over the outer end of which is fastened a condom with a small slit in the end—this acts as a valve, allowing air to escape but not return.

Fluid develops frequently—more often when a complete collapse is prevented by adhesions and when positive intrapleural pressures are used. It is our practice to aspirate the fluid when it forms. We feel that the risk to the patient is greater by leaving it in than by withdrawing it.

Phrenic Nerve Interruption

Recently there has been considerable unfavorable criticism of phrenic nerve interruption. This criticism grew out of the fact that all of the original operations caused permanent paralysis of the diaphragm. We agree with these objections.

However, we avoid the unfavorable results of a permanent paralysis by doing a temporary nerve interruption. In doing a phrenic operation we use the method devised by Goetz, advocated and popularized in this country by Dr. John Alexander. The paralysis of the hemidiaphragm, when the operation is performed in this manner, persists four to nine months, when the function gradually returns. When the dia-

phragm begins to function again, and if the patient still needs the benefit of its paralysis, a second similar operation may be performed easily. In some patients we have repeated it the third time and have a diaphragm which is capable of resuming its function.

We find the use of phrenic nerve interruption as important in conjunction with other measures as it is when used independently. Many unsatisfactory collapses by pneumothorax can be converted into a satisfactory measure by the use of this minor operation. This is especially true in those cases with adhesions to the diaphragm. The relaxation obtained will often allow a cavity to be collapsed by the pneumothorax which, before the paralysis of the diaphragm, was continuously pulled open by every cough and respiratory movement.

It is a matter of frequent observation that by the use of a combination of these methods, additional beneficial results may be accomplished amounting to 25-35 per cent of the heretofore unsuccessful cases.

Temporary phrenic interruption is used routinely on a patient who has had a successful pneumothorax long enough and the lung is going to be permitted to re-expand. Thus the once diseased lung is protected from full function for several months longer. Phrenic interruption has another important function as preliminary to complete thoracoplasty—its use here is to test the contralateral lung and, too, a high rise of the diaphragm may make it unnecessary to remove as many ribs as would otherwise be necessary.

Oleothorax

Oleothorax is a valuable supplement to pneumothorax, and has a distinct place in collapse therapy. It is not uncommon to note that often with the continued use of pneumothorax, particularly where only partial collapse has been obtained, as a result of adhesive pleuritis, the pneumothorax space becomes reduced. This indicates that the collapse is soon to be lost through this process. The collapse can frequently be maintained for an indefinite period of time by displacing the air with oil.

This procedure is only adapted to those cases having the lower part of the lung adherent to the chest wall and diaphragm; this prevents the oil from resting upon the diaphragm. The preparation with which we have had the greatest success is ordinary Wesson oil. This causes but little, if any, reaction, and prevents by its weight further reduction of the pleural space. Our experience with Gomenal or other antiseptic oils has been most unsatisfactory.

Scalenotomy

Scalenotomy is used in moderately advanced apical tuberculosis, usually in conjunction with phrenic interruption with the hope of effecting a cure by this minor procedure and avoiding the more formidable procedures. It adds additional rest to the apex by relaxation and also affords some restriction of motion of the upper three ribs. This procedure probably has not been as widely used as it should have been, especially in the earlier cases. Our experience with this procedure has been most satisfactory.

External Pneumonolysis

External pneumonolysis, while not as popular as the other procedure, certainly has its place, particularly in the very sick patients who have not yielded to the less drastic measures and where there are specific contradictions to thoracoplasty. In this type of cases, it is indicated (1st) in a single, small, apical cavity with a good contralateral lung, (2nd) with involved contralateral lung, or bilateral, apical cavities, (3rd) in some cases of posterior thoracoplasty where the cavity has not been successfully closed. Materials used in this procedure are muscle, fat, gauze, rubber dam, and paraffin.

Complications to be considered in this procedure are (1st) rupture of external cavity wall during operation, with infection of pleural space and resultant empyema, (2nd) interference with cardiac function due to excess pressure, (3rd) where paraffin is used, perforation of wax through cavity wall into a bronchus with extrusion of wax.

Intercostal Neurectomy

Intercostal neurectomy has more limited use in collapse therapy than other measures. Its field of greatest usefulness is in those patients in whom the other minor procedures have failed to effect an arrest and whose present physical condition contraindicates thoracoplasty. It is used with

the hope of the patient's improving to the point that he may be a suitable risk for thoracoplasty.

Thoracoplasty

If all other measures fail to accomplish the desired result, or if the case is such that it is obvious that other procedures can but cause a waste of time, we resort to an extrapleural thoracoplasty, either partial or complete, or one that is bilateral and partial. The details of this procedure will be omitted. Suffice it to say, many cures have been effected by virtue of thoracoplasty which would, with anything less radical, certainly, surely and fairly rapidly have resulted in death.

The attitude of patients regarding these measures is significant. Very frequently we have patients who ask when they will get their collapse procedure started and even get impatient because it is not done immediately. This is especially true in the Southern Pacific Sanatorium where there is always a large percentage of patients under collapse therapy. Furthermore, even though looked upon as radical by many, it is not uncommon to have patients come to us of their own volition to ask if they are suited for thoracoplasty.

In closing, I want to emphasize again the opening thoughts — two factors are largely responsible for tuberculosis being of such tremendous importance—first, failure to make the correct diagnosis while the prognosis is good, and while cure may be effected with a minimal morbidity; second, failure to use the methods of treatment which will offer the best, the surest, and the quickest prospects for a cure.

Summary

1. The importance of early diagnosis of pulmonary tuberculosis is discussed.

2. The necessity of collapse therapy in addition to routine bed rest is emphasized.

3. The importance of using the methods of collapse individually, collectively, and successively, is stressed.

4. The various surgical methods used with their indication, contra-indications, and complications, are discussed.

Rupture of Tendo Achilles

Report of a Case

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This rather rare injury has been briefly described by Whitman, and Jones and Lovett. Very little has appeared in the literature in regard to end results in this lesion.

Two types of injuries have been described by Jones and Lovett: "(1), A rupture of the fibers in the transverse plane. This injury usually occurs at about one-half inch above the attachment to the os calcis or slightly higher at its narrow portion, or at the musculotendinous junction. (2), Sliding tears, the tendon bundles being dragged apart in a coronal plane."

The case reported is of the second type.

Case Report

J. L., white, male, aged 41, came to my office on August 3, 1936, complaining of an injury to the right foot and leg. The injury occurred on June 5, 1936, eight weeks prior to my first examination. He gave a history of having injured the right leg while playing volley ball. While standing on his toes ready to receive the ball he noticed a severe pain in the right leg in the region of the tendo Achilles.

The only treatment given was an adhesive strapping which was applied the day following the injury. The patient removed the adhesive in about one week.

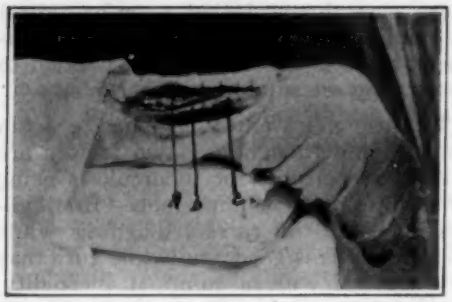

FIG. 1

Photograph of the ruptured tendon taken immediately after the incision was made. (a) Proximal portion of ruptured tendon. (b) Plantaris tendon intact. (c) Distal portion of the ruptured tendon.

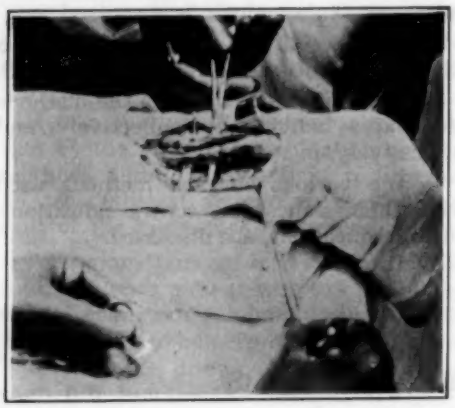

FIG. 2

Shows the ruptured proximal portion of the tendon being dissected from the underlying structures.

Examination was negative except for the injured right tendo Achilles. He walked with a limp characteristic of a loss of function of the gastrocnemius and soleus muscles. A calcaneous deformity of the right foot was being developed.

Examination of the tendo Achilles revealed a definite defect in the tendon about one and one-half inches proximal to its attachment to the os calcis. There was very little function exercised through the combined action of the gastrocnemius and soleus muscles. A diagnosis of a ruptured tendo Achilles was made, and open repair advised. The operative procedure was done on August 12, 1936. The condition of the ruptured tendon may be seen in the photographs taken after a complete exposure was made (figures 1 and 2). The proximal portion of the ruptured tendon was completely detached from the distal portion and was adherent to the underlying structures. The plantaris tendon was intact and may be seen in the photographs. There was evidence of considerable hemorrhage, having occurred at the point of injury. The tendon sheath was incorporated in the mass of adhesions. This was a sliding type of rupture.

The adherent portion of the tendon was carefully dissected from the underlying structures. After freshening the opposing edges they were sutured with black silk to the distal portion of the tendon. After closing the incision a plaster casing was applied from the mid-thigh to the toes, with the knee flexed about 30 degrees and the foot in a moderate equinus position. This was changed in three weeks, and the foot brought up to about a 110 degree angle with the leg. He was allowed to walk at the end of eight weeks, with a short leg brace, which limited dorsiflexion of the foot to 90 degrees, the heel of the shoe being raised three-eighths of an inch. This was worn for three months.

Examination when last seen, eight months after operation, revealed an excellent return of function of the tendo Achilles. He walked without a limp. There was no evidence of a calcaneous deformity of the foot, and there was a normal range of active motion in the ankle joint.

Conclusion

This rather rare injury, of a sliding type of rupture involving the tendo Achilles should be treated by open operation. Early operative repair is desirable, but as demonstrated in this case a good result may be obtained when repair is done several weeks after the injury.

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TYPHOID FEVER

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A general infection caused by baccillus typhosus characterized by hyperplasia and ulceration of intestinal lymphatics, swelling of mesentive glands and spleen.

History: In 1829 Louis gave the disease the name of typhoid fever. Gerhard of Philadelphia gave the first satisfactory description of the disease in 1837.

ETIOLOGY

Typhoid is a disease of filth and is an index of the sanitary conditions of a community. It is most prevalent in the autumn. The disease is more common in the male than female.

The typhoid bacillus is a short, thick, flagellated motile bacillus with round ends, about 3 u. in length and .6 u. in width. Early in the disease its bacilli are probably circulating in the blood. They are probably always present in the rose spots.

Fingers, food and flies are means of propagation. Infected water supply has been the source of numerous large epidemics. Typhoid carriers are always a source of danger. The organism may be present in the urine, bile or intestine. Flies as a means of spreading the disease are important in camps or where large groups of people are closely segregated.

Typhoid is a disease of youth and young adult life. The ages of 336 cases examined ranged from eight months to 60 years of age, about 90 per cent being between the ages of 5 and 30. The greater number for any one year was 20, at the age of 11.

MORBID ANATOMY

There is a catarrhal condition throughout the small and large bowel. There is hyperplasia of Pyers patches, the follicles are swollen, grayish white and the patches project. The solitary glands are swollen and project. Later there is a great increase in cells of the lymph tissue which may infiltrate the surrounding mucosa. When the hyperplasia is very severe the lymph follicle can no longer return to normal and is followed by necroses and sloughing. The ulcerations due to sloughing, if extensive, results in hemorrhages which may be extensive, frequently leading to death. The thin ulcerated areas may perforate at any time. After the sloughs have separated healing begins and regardless of the extent of the slough, stricture never results.

The mesenteric glands show hyperemia and become greatly swollen. Occasionally these may rupture causing hemorrhage or peritonitis.

The spleen is invariably enlarged. The tissue is soft and occasionally rupture occurs.

SYMPTOMS

Three hundred and thirty-six cases were received extending over a period of four years. One hundred and seventeen gave history of positive exposure, having been out of town on fishing trips, drinking of well or spring water, or contact with typhoid patient.

The most constant symptom was fever, practically 100 per cent showing an elevation of temperature. Fifty per cent of the patients complained of headache, 132 had diarrhea, 34 complained of constipation, 136 complained of abdominal pain, 119 complained of generalized ill feeling and muscular aching, 52 complained of vomiting and 43 had epistaxis. The patients usually began to complain of general ill feeling, slight fever followed in a few days by the increase in the above symptoms, sometimes accompanied by vomiting, diarrhea or more or less indefinite abdominal distress. The fever becomes more intense, being higher in the afternoon, a rash may be noted, the patient is forced to bed and a definite diagnosis can usually be made. The fever usually takes about one week to reach its' height, then remaining of the plateau stage for one week to ten days and then begins to

fluctuate more widely as the fever subsides.

A large number of patients complain of abdominal pain, this varies from mild discomfort to sharp pain. One patient was operated for appendicitis and many complain so bitterly that perforation must be considered. In case of perforation the pain usually comes on suddenly, is intense, sometimes cramping in character, usually accompanied by vomiting, abdominal rigidity, loss of liver dullness, and X-ray may show layer of air under the diaphragm. In practically every case of perforation the layer of air was demonstrable.

COMPLICATIONS AND SEQUALAE

	Year 1928 1929	Year 1929 1930	Year 1930 1931	Year 1931 1932	Year 1932 1933	Total	%
Number of Cases	65	39	88	46	98	336	
Broncho Pneumonia	4	3	8	5	21	41	12.2
Lobar Pneumonia	0	0	1	1	2	4	1.19
Distension	23	18	23	12	19	95	28.2
Furunculosis	3	1	4	5	10	23	6.9
Intestinal Hemorrhage	10	13	16	7	12	58	16.2
Perforation	3	0	4	1	2	10	2.9
Psychosis	2	1	5	1	5	14	4.1
Convulsions	2	0	1	2	1	6	1.79
Thrombophlebitis { Left	1	1			9	12	3.58
Thrombophlebitis { Right					6	6	1.79
Acute Otitis Media	1	1	5		5	12	3.58
Acute Myocarditis	4	1			5	10	2.9
Chronic Myocarditis	0			2	1	3	.9
Pregnant	2	1	1			4	1.19
Miscarriage		1	1			2	.6
Cholecystitis				1	1	2	.6
Cholecystotomy					2	2	.6
Empyema					2	2	.6
Peripheral Neuritis					2	2	.6
Nephritis					1	1	.3
Orchitis				1	1	2	.6
Paronychia		1		2		3	.9
Periostitis					1	1	.3
Pericardial Effusion					1	1	.3
Parotitis					1	1	.3
Uremia				1		1	.3
Stomatitis			1		1	2	.6
Pressure Sores				2	2	4	1.19
Cellulitis			2	1		3	.9
Pleural Effusion					3	3	.9
Fecal Impaction		2		1	1	4	1.19
Ishiorectal Abscess				1		1	.3
Mastoiditis			1		1	2	.6
Stricture of Rectum		1				1	.3
Cystitis	1					1	.3
Pyelitis	2		3		1	6	1.79
Operated for Appendicitis	1		1			2	.6
Mortality	14	7	15	2	6	44	13.1
Average Stay In Hospital	35.3	39.6	41.6	39.1	33.7	37.4	

INCIDENCE ACCORDING TO AGE

Age in Years	Number of Cases
1	3
2	3
3	3
4	3
5	7
6	15
7	7
8	9
9	12
10	11
11	8
12	20
13	13
14	10
15	8
16	8
17	9
18	14
19	15
20	9
21	8
22	13
23	12
24	11
25	10
26	7
27	9
28	2
29	11
30	3
31	13
32	6
33	4
34	4
35	2
36	4
37	0
38	1
39	2
40	5
41	0
42	1
43	2
44	1
45	2
46	2
47	1
48	3
49	1
50	1
51	2
52	1
53	0
54	1
55	1
56	0
57	0
58	2
59	1
60	1
61	0

Physical Findings

The patient is usually drowsy and has washed out appearance. Face is frequently flushed, temperature is high and the pulse is relatively slow in adults, children may fail to show the slow pulse. The tongue is heavily coated, furred, and dry. The abdomen is moderately to markedly distended and has a somewhat doughy feel. Of the 336 cases examined 37 showed a dicratic pulse, 131 had rose spots and 130 had palpable spleen, 85 were irrational and 95 showed marked distention. Rose spots usually appear over the upper abdomen and chest, in the form of a moderately sized macular rash, about ⅛ inch in diameter, they fade on pressure, are pink in color and the typhoid organism may be cultured from these lesions.

The spleen is usually enlarged and palpable at some time during the disease, the consistency is rather soft and mushy.

Distension has been a rather troublesome symptom, but has been greatly relieved by improvement in the typhoid diet in which the fermentable sugars were replaced by other sugars. Dextrose has largely taken the place of succrose in the diet at the St. Louis Isolation Hospital. Lactose has been used by some.

Diagnosis

Patient takes sick with high persistent fever, slow pulse, drowsy, sometimes irrational, abdominal distress, vomiting or diarrhea. Rose spots, dicratic pulse, palpable spleen may be noted. The patients entering isolation had admission blood culture, stool and urine ran and three discharge urine and stools. There were 27 patients with positive urine, 24 with positive stools and 76 with positive blood culture. The Widal was the most reliable positive finding, being positive in 289 cases.

Severe typhoid cases may be mistaken for meningitis, the patient is irrational or unconscious, muscles may show considerable spasticity, both have high fever and slow pulse. In meningitis the rash if present, is petecheal in character, does not fade on pressure and the spine is stiff, Kernig positive, neck stiff and spinal fluid shows cloudy fluid, with increased pressure and cell count, the gram negative diplococcus may be found.

Miliary tuberculosis may be mistaken for typhoid, exhibiting chills, fever, malaise. The finding in chest of consolidation, rales, increase in voice and breath sound. X-ray will confirm the diagnosis. Undulant fever may cause some difficulty in diagnosis, there is remittent fever, absence of signs of typhoid, and positive agglutination tests for bacillus brucella abertus.

Generalized pyemia may simulate typhoid, findings of infection elsewhere, absence of signs of typhoid and increased white blood count aid in the differential diagnosis. The white blood count is usually low in typhoid, five cases observed had white blood count below 3,000, a count of 2,000 was the lowest, 34 per cent showed white blood count of 3,000 to 6,000, 35 per cent of 6,000 to 8,000 and remainder above 8,000. There was quite a shift to the left, many young cells being present at the expense of a reduction in segmented cells, the lymphatic count being practically normal.

Complications and Sequelae

The most frequent complication was intestinal hemorrhage being present in 58 cases or 17.2 per cent. These varied from a small amount of blood in stool to severe hemorrhage in which the patient was found lying in a pool of blood. The greater number were of the moderately severe type. The pulse became rapid, weak, blood pressure dropped if the hemorrhage was severe. Red blood count showed considerable anemia. These were watched closely, pulse and blood pressure checked at frequent intervals.

Second in incidence was broncho-pneumonia which was present in 41 cases or 12.3 per cent. Patients had cough, moderate impairment of resonance, rapid breathing and rales over both sides of chest. There were four cases of lobar pneumonia in the series of 336 cases examined. There were three cases of pleural effusion following broncho-pneumonia.

Toxic psychosis developed in 14 cases or 4.2 per cent; these patients were disoriented, had various delusions, often of persecution, some would mutter to themselves while a few were very loud and noisy, screaming at the top of their voice and disturbing everyone in the hospital. These usually cleared up after the patient had recovered from the typhoid, some re-

quiring several weeks after the temperature was normal.

There were 16 cases of thrombophlebitis, nine occurring in the left lower extremity and six of the right with one bilateral. There was pain and swelling over the femoral vein with elevation of fever and local heat. Acute purulent otitis media was present in 12 cases or 3.6 per cent.

Acute toxic myocarditis was present in 10 cases or 3.3 per cent. The pulse was rapid, weak, heart tones were very distant, liver was enlarged and some edema of ankles were shown. There were three cases of chronic myocarditis which had been present for some time. One case of pericardial effusion developed.

Because of the long confinement to bed furunculosis is frequent, being present in 23 cases or 6.9 per cent. The skin must be kept clean, alcohol rub daily and patient should change position frequently. Four cases of rather extensive pressure sores developed.

Intestinal perforation is the complication most dreaded. The patient has sharp pain in his abdomen, sometimes cramping in nature, usually vomits, the abdomen becomes rigid, white blood count is elevated, liver dullness obliterated and X-ray shows layer of air under the diaphragm. There may be drop in temperature and elevation of pulse. Perforation occurred in 2.9 per cent (10 cases) of the cases, all being present in male patients, the youngest being five years of age. Of these eight died and 2 recovered. The patients were operated immediately, but practically all had a more or less diffuse peritonitis.

Six patients had a pyelitis, as shown by chills, fever and white blood cells in urine.

Four of the patients were pregnant at the time they developed typhoid fever, two of these miscarried, while the other two seemed to suffer no ill effects.

Because of abdominal pain two patients had been operated for appendicitis at the time they entered the hospital.

One patient had a periostitis of the rib which had developed about 15 years following his typhoid. A thoractomy was done and because of persistent positive cultures from duodeonal drainage his gall bladder was removed. Patient eventually recovered.

There were two cases of cholecytitis, one of which had cholecystotomy done on two occasions. In spite of the routine enema given every morning four cases of fecal impaction developed.

Other less frequent complications were, empyemia (2), peripheral neuritis (3), convulsions were present in six cases, orchitis (2), mastoiditis (2), nephritis (1), stomatitis (2) cellulitis (3), external otitis (1), ischo-rectal abscess (1), stricture of rectum (1) and cystitis (1).

A number of patients had more than one disease. Twenty-two patients had positive Wasserman reaction, three had measles, three patients were dementia praecox, two had scarlet fever and varicella, malaria (1), impetigo (1), pulmonary tuberculosis (1), scabies (1), diphtheria (2), influenza (1), and one diphtheria carrier.

Immunity

Typhoid fever usually confers an active immunity that lasts for life. Of the patients examined only three gave history of previous typhoid, one was 12 years previous, and another 33 years previous. The time elapsed in third case was unknown.

Typhoid vaccine has been very effective in the prevention of the disease. Three patients had received the vaccine, one had the shots four days previous to onset so an immunity had not had time to develop. The other two had their series of shots three years and four years previous. If the typhoid vaccine had been repeated every three years the immunity would probably be practically 100 per cent.

The Widal is of little value in diagnosis if the patient had previously had typhoid vaccine. Widals were run on 13 people who had previously had typhoid vaccine, of these five were negative, while eight gave a positive Widal reaction which varied from the lowest which was 1:20 to the highest which was 1:1280.

Prognosis

The prognosis is fairly good in uncomplicated cases, however there will be a few deaths among the extremely toxic cases. In the 336 cases examined there were 44

deaths or 13.1 per cent. Of the cases dying there were 18 cases of intestinal hemorrhage (40.9 per cent), 14 cases of broncho-pneumonia (31.8 per cent), two cases of lobar pneumonia (4.5 per cent) and eight cases of perforation (18.1 per cent). Others were complicated by myocarditis, pleural effusion, pericardial effusion and less common complications.

The youngest patient to die and also to contract the disease was eight months old while the oldest to die was 58 years of age. Only four patients below 10 years of age died, 30.9 per cent of the deaths were between the ages of 10 and 20, and 35.7 per cent between the ages of 20 and 30 years.

Treatment

The treatment is chiefly dietary and good nursing care. Patient is in bed at absolute bed rest, being fed liquids until their temperature has been down for one week. They are given a high caloric liquid diet with feedings every two hours. The diet is made up largely of milk, cream, gruels, fruit juices and custards. For the past few years the succrose sugar has been largely replaced by dextrose which seems to have lessened the amount of distension.

The fever is treated by ice bags, sponge baths, alcohol fans and in extreme cases by cephalic douche.

The patient routinely receives an enema every morning. Distension may develop which is treated by reduction in the feedings to ¼ or ½ the amount usually given, rectal tube and occasionally hot turpentine stoops.

Intestinal hemorrhage is treated by sedation to keep the patient quiet, all food by mouth is stopped, ice bag is placed to the abdomen, subcutaneous fluids administered, calcium in large doses intra-muscular or by mouth may be given. The ceanothyn and other hemo stiptics may be given but their value is rather questionable. Intra-muscular blood may reduce the coagulation time. Transfusions and intra-venous fluids are given only in extreme cases at the time of the hemorrhage. After the bleeding stops small transfusions are given slowly to make up for the blood lost. Pulse and blood pressure are checked frequently.

Perforations have been treated by immediate operation. The course is always very stormy as the patients are extremely sick before perforation occurs. Fluids and transfusions are given to help keep up the patient's strength.

Transfusions have been given rather frequently to acutely ill typhoid patients always being given small amounts, 250 to 300 cc. at a time, and given very slowly. The patients are "pepped up" considerably in most cases. There were 31 transfusions given with average drop in temperature of .78 degrees in 24 hours and .93 degrees in 48 hours after being administered, besides general improvement in their appearance.

In acute myo-carditis the patient is digitalized, stimulants such as strychnine and small doses of adrenalin may be given.

Acute cholecystitis is treated conservatively by ice bag to upper abdomen, and sedation, in cases where the symptoms are marked cholecystotomy should be done.

After the temperature has been normal for seven days the diet is gradually increased, the increases coming every other day until the patient is on a soft diet. At this time the patient is allowed to sit up in bed. When patient is placed on a soft diet he is allowed out of bed. After temperature has been normal for 10 days, three urine and stool cultures are taken on successive days. Provided these are negative the patient may be discharged. If stool or urine returns positive the patient should be isolated until negative. Sometimes the patient becomes a chronic carrier after the disease has subsided. Large doses of hexamethalamine are given in hope it will clear up the urine and stool culture.

Of the cases examined seven were admitted as carriers without any clinical symptoms of typhoid fever. One patient ran away after being in the hospital nine days, one was discharged after 57 days in hospital still with positive stool cultures, the other four obtained negative cultures, one remaining in hospital 88 days before the negative cultures were obtained. One patient had repeatedly positive culture from Lyon's drainage of the gall bladder, this patient had his gall bladder removed and was discharged with negative cultures

at the end of 40 days in the hospital. The carriers are treated by large doses of hexamenthalamine, and vaccination with typhoid vaccine, which sometimes helps. An antogenous vaccine works in some cases. The average stay in the hospital for all the typhoid cases treated was 37.4 days.

The Autonomic Nervous System

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The autonomic nervous system differs from the cerebrospinal nervous system in that the former supplies smooth or involuntary muscle while the latter supplies striated or voluntary muscle.

The autonomic system is composed of two main parts (1) the sympathetic or thoraco-lumbar division and (2) the parasympathetic or craniosacral division. The sympathetic division is composed of two chains of ganglia situated on either side of the vertebral column extending from the superior cervical ganglion, in the head, down to the upper sacral segments, in the pelvis. All the viscera of the thorax and abdomen and some organs in the head, as the ciliary muscle of the eye and the salivary glands have a reciprocal innervation, i.e. they are supplied with both sympathetic and parasympathetic fibers. The parasympathetic division is composed of fibers in the III, VII, IX, X cranial nerves and the pelvic or nerve irigens from the first three sacral segments of the cord.

The efferent fibers of both divisions of the autonomic system consist of pre- and postganglionic fibers. Most of the preganglionic efferent sympathetic fibers are comparatively short, passing from the cord out the anterior spinal nerve root and through the ramus communicans to the sympathetic ganglion lying close to the vertebral column. The preganglionic fibers passing to the superior cervical ganglion are long, however, as they emerge from the thoracic region of the cord and must pass up the sympathetic chain to the superior cervical ganglion before they form synaptic connections with the postganglionic fibers. The preganglionic efferent fibers of the parasympathetic division are long, especially those of the vagus. They pass from the brain or sacral portion of the cord to ganglia on or very near the organ to be innervated before they form synaptic connections with the postganglionic fibers. The postganglionic fibers of the sympathetic division are consequently long and those of the parasympathetic division are short. The autonomic nervous system is essentially an efferent system, but afferent fibers are concerned in some of the visceral reflex acts.

It has been quite conclusively proved that the efferent fibers only are concerned in the production of pain, whether referred or visceral and that the afferent autonomic fibers play no part. For instance, pain referred to the shoulder tip from irritation of the central portion of the diaphragm. The impulse passes up the phrenic nerve to the cord, an adjustor neuron then carries the impulse to a synapse with the sympathetic efferent preganglionic fiber, thence to the sympathetic ganglion where the postganglionic fiber takes the impulse to the shoulder tip to the posterior column of the cord, to the lateral spinothalamic tract of the opposite side and thus up the cord to the cortical center in the postcentral gyrus.

There are certain tests for function of the autonomic system. Vasomotor function is determined by measurements of the skin temperature, and heat elimination by the extremities. Blood pressure response to standard forms of stimulation and posture, and response of the cardiac rate to standard exercise tests are also used. Measurement of vasoconstriction is made by determining the temperature response of the digits, hands and feet to

fever. Blood pressure response to cold and inhalation of CO2 (10%) are measured. Responses of the blood pressure and pulse to standard exercise tolerance tests, as 15 trips up and down a set of two stairs 1½ feet high, are also measured. The vasodilatation tests are useful in differentiating organic and vasomotor disturbances of the extremities, and in the selection of patients who have occlusive arterial diseases for sympathetic ganglionectomy. Sweating tests are used (1) to assist in diagnosis of diseases affecting the function of sweating and, (2) to demonstrate whether or not complete denervation of the sympathetic fibers to the hands or feet is present after cervicothoracic or lumbar sympathetic ganglionectomy. Tests of vasomotor reactability are valuable in determining the presence or absence of the disposition to essential hypertension. Test of the response of the heart to standard exercise tests are important in diagnosing cardiac neuroses, such as effort syndrome and neurocirculatory asthenia.

Of the 350,000 organic drugs known, practically all of them act to some extent upon the autonomic nervous system. A few of them act solely on the autonomics. Of these few, some act on the parasympathetics and some on the sympathetics. Pilocarpine, physostigmine, muscarine and arecoline stimulate parasympathetic nerve ends; atropine, hyoscine and homatropine paralyze the parasympathetic endings. Adrenaline, tyramine, ergotoxine (in small doses) and ephedrine stimulate sympathetic nerve ends; while ergotoxine (in large doses) paralyzes them. Some of the drugs acting on the autonomic ganglia are nicotine, lobeline, methylhordenine and coniine which causes marked primary stimulation followed by depression if the dose is large enough; curare is purely depressent on the ganglia. Recently two terms have been coined to differentiate the function of the two types of autonomic fibers, "cholinergic" and "adrenergic," depending upon whether the fibers liberate acetycholine or adrenalin at their terminations. Thus, the postganglionic parasympathetic fibers will liberate acetylcholine at their terminations, this liberation being inhibited by atropine and augmented by physostigmine. The sympathetic fibers are considered to liberate adrenaline at their terminations. Cocaine potentiates this "adrenergic" action. In some instances fibers that belong anatomically to the true sympathetic system are cholinergic in action; e.g. the nerves to the sweat glands, and apparently some to the blood vessels, for in a normal animal acetylcholine dilates the arteriols, while after atropine it no longer has this effect. Experimental evidence has been obtained to the effect that the passage of impulses from the endings of preganglionic fibers over to the ganglion cells of the postganglinic fibers is accomplished by the liberation of acetylcholine, probably in all instances, including both the true sympathetics and the parasympathetics.

Surgery of the autonomics is instituted in the severe cases or in the mild and moderately severe cases in which medical treatment has failed. Raynaud's diseases and the frequently associated scleroderma yield strikingly to sympathectomy in the suitable cases. Essential hyperhidorosis immediately and permanently responds to sympathectomy. Sympathetic ganglionectomy in carefully selected cases of thromboangitis obliterans has yielded as striking results as in Raynaud's diseases. Spastic and trophic lesions such as osteoporosis, poliomyelitis, trophic ulcers, causalgia and painful stumps have been treated successfully in some cases by sympathetic ramisectomy. Resection of the splanchnic nerves has had some success in lowering essential hypertension in selected cases of young people less than 40 who had a history of short duration and of slow progression of the diseases. Hirschsprung's diseases or congenital megacolon has responded to resection of the superior hypogastric plexus, as has also cord bladder.

Notice For Interns and Residents

Mr. Tom Testerman, Morrison, Oklahoma, advises there is an excellent opportunity for a young physician to practice in that vicinity. Anyone interested should get in touch with Mr. Testerman.

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McAlester, Oklahoma

DR. T. H. McCARLEY.....Associate Editor
McAlester, Oklahoma

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The editorial department is not responsible for the opinions expressed in the original articles of contributors.

Reprints of original articles will be supplied at actual cost provided request for them is attached to manuscripts or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in The Journal the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the Editor, McAlester Clinic, McAlester, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes of addresses, births, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

Printed by News-Capital Company, McAlester.

EDITORIAL

STATE DUES WILL NOT BE ACCEPTED AT THE REGISTRATION DESK, ANNUAL MEETING, EXCEPT THROUGH COUNTY SECRETARIES!

State Dues will not be accepted at the Registration Desk, Annual Meeting, except through County Secretaries.

The reason for this is that we do not know the amount of the County dues, and whether or not the Applicant has been acted upon favorably by the membership of his County Society. It has never been the policy of the State Association to accept dues direct; they must come through the Secretary of the component County Medical Society.

ANNUAL MEETING

You will note in this issue of the Journal the complete program of the State Meeting and you will agree that there will be presented some of the leading authorities of the country, with subjects that will be of vital and universal interest. You will note that the meetings of the House of Delegates have been arranged so that the Delegates will have the opportunity to attend the General Sessions on Tuesday and Wednesday mornings.

The Section programs are of unusual interest this year and the very best State talent will be presented on these programs.

The Skirvin Hotel has every facility for a meeting of this kind both as to hotel accommodations and accommodations for the various Section Meetings. It is particularly fine to have all of the functions under one roof; the only exception to this is the President's Reception and Dance which will be held in the beautiful Silver Glade Room in the Skirvin Tower. An excellent orchestra and floor show has been engaged for this social gathering.

With the Clinics which will be held throughout the day, Monday, May 1st, at the various Hospitals in Oklahoma City you can expect three days of edification and entertainment.

February 11, 1939

Dr. L. S. Willour, Secretary
Oklahoma State Medical Association
McAlester, Oklahoma

Dear Doctor:

At the suggestion and advice of a number of Councilors, it is requested that a prominent notice be published in the next issue of the Journal inviting the attention of officers and members of our Association to the fact that their committee on the revision and amendment of the Constitution and By-Laws is desirous of receiving from all members interested, information, guidance, and recommendations, so that the revised Constitution when submitted for final passage will represent the ultimate desire of a cross section of the largest majority of our membership and will thereby assure of passage without unnecessary controversy at the next annual meeting.

Communications relative to this matter may be addressed through the Councilors of the respective districts, or directly to a member of the committee composed of Dr. Ritzhaupt of Guthrie, Oklahoma; Dr. C. P. Bondurant, Medical Arts Building, Oklahoma City; and Dr. E. Albert Aisenstadt, American Hospital, Picher, Oklahoma.

Thanking you for giving this matter your early attention, I am

Very truly yours,
E. ALBERT AISENSTADT.

CC:—Dr. H. K. Speed
Dr. J. D. Osborn, Jr.

CONSTITUTION

Article 1. Name of Association

The name of this organization is the Oklahoma State Medical Association.

Article 2. Purpose

The object for which this Association is formed is to promote the science and art of medicine.

Article 3. Component Societies

The membership of this Association shall be organized into county medical societies or district medical societies as circumstances may dictate and the Association may determine. The functions of each such society and its relations to the Association shall be defined in a charter issued by the Association subject to amendment and revocation by the Association in accordance with such terms as may be prescribed by the By-Laws.

Article 4. Membership

The membership of this Association shall comprise all members in good standing of its component societies as indicated by the membership records of the Association.

Article 5. House of Delegates

Section 1. The House of Delegates shall be composed of (1) Delegates elected by the component county and district societies of the Association. (2) The officers of the Association enumerated in Article 8, Section 1, of this Constitution.

Section 2. All legislative powers of the Association reside in the House of Delegates which alone shall have authority to determine the policies of the Association. The House of Delegates shall transact all business of the Association, directly or through agencies created by it, the transaction of which is not vested by this Constitution in any other agency. The House of Delegates shall elect the general officers of the Association.

Section 3. The House of Delegates may provide for a division of the scientific work of the Association into such sections as in the judgment of the House will best promote the scientific and professional activities of the Association, or may delegate the Council to do so.

Section 4. The House of Delegates may provide for the organization of such Councilor District Societies as in its judgment will promote the best interests of the profession, but the membership of any such society shall be limited to members of the component county societies of which it is made up.

Article 6. Council

Section 1. The Council shall be composed of (1) Councilors elected by the House of Delegates from one or more nominations submitted by the component county and district societies of the Association grouped as Councilor Districts and provided for in the By-Laws, and (2) Officers of the Association enumerated in Article 8, Section 1, of this Constitution.

Section 2. The Council shall be the Executive or governing Board of this Association and shall carry out the mandates and policies of the Association which are determined by the House of Delegates. Between sessions of the House of Delegates the Council may initiate emergency legislation, but in no case may such legislation conflict in policy or mandates of the House of Delegates or be in conflict with this Constitution or By-Laws, and such legislation to be valid subsequent to the next annual meeting, shall be approved by the House of Delegates. The Council shall have supervision and control of the finances and particularly the expenditures of the Association, the investment of its funds, and the direction and control of its property.

Section 3. The Council shall meet at least once during the annual session, and on call by the President between annual sessions of the Association on his own initiative or by petition to the President by at least one-third of the members of the Council.

Article 7. Sessions and Meetings

Section 1. The Association shall hold an annual session. The time and place for holding each annual session may be fixed by the House of Delegates or, by authority of the House, by the Council.

Section 2. During the annual session there shall be at least one general meeting open to all registered members and guests; at least one meeting of the House of Delegates, either immediately preceding, during the session, or immediately following; and at least one meeting of the Council.

Section 3. Time and place fixed for an annual session, whether by the House of Delegates or the Council may be changed for cause by a two-thirds vote of the full membership of the Council.

Section 4. Special meetings of the Association or of the House of Delegates may be called by a two-thirds vote of the full membership of the Council, and shall be called upon petition to the Council by 30 or more delegates of the Association. At such a meeting only such business may be transacted as is specified in the call.

Article 8. Officers

Section 1. Officers of this Association shall be a President, a President Elect, a Secretary-Treasurer-Editor, a Speaker of the House of Delegates, a Vice-Speaker of the House of Delegates, and ten Councilors.

Section 2. The President shall be elected for a term of one year; the Secretary-Treasurer-Editor, the Speaker of the House of Delegates, the Vice Speaker of the House of Delegates and the Councilors, for three years; the Council being divided into classes, a portion will retire each year.

Section 3. The President shall assume office at the time of his inauguration, during the Annual Session. Delegates to the American Medical Association shall assume office at the close of the Annual Session. Speaker and Vice Speaker of the House of Delegates, Secretary-Treasurer-Editor and the Councilors shall assume their duties on January 1st, following their election.

Section 4. Vacancies created by the death, resignation, or removal of the above named officers shall be filled by temporary appointment by the Council, such appointment being effective until the

next annual meeting of the House of Delegates, which shall elect a successor to complete the unexpired term, if any.

Article 9. Finance

Section 1. Funds for meeting the expenses of the Association may be arranged for by the House of Delegates by an equal per capita assessment upon each component county or district society. The amount of such assessment shall be fixed by the House of Delegates. Funds may also be appropriated by voluntary contributions requested by resolution of the House of Delegates, and in any other manner approved by the House of Delegates.

Section 2. Request for expenditure of funds may be voted by the House of Delegates but all appropriations must be authorized for expenditure by the Council.

Section 3. The Council shall submit an annual budget for approval by the House of Delegates, detailing its financial needs for the ensuing year, and the House of Delegates is authorized to accept, reject, or amend the budget submitted.

Article 10. Referendum

Section 1. At any session of the House of Delegates, the House may by two-thirds vote of its registered members submit any question to the membership of the Association for its vote. A majority vote of all the members of the Association shall determine the question.

Section 2. The Council shall be in charge of the referendum and may designate an officer of the Association or a Committee to canvass the vote and announce the results.

Article 11. Seal

The Association shall have a common seal. The power to change or renew the seal shall rest with the House of Delegates.

Article 12. Ethics

Principles of Medical Ethics of the American Medical Association in force at the time of the adoption of this Constitution, and as they may from time to time be thereafter amended by the American Medical Association, shall be accepted as the Principles of Medical Ethics of the Oklahoma State Medical Association and is binding on its members and component county and district societies.

Article 13. Amendments

The House of Delegates may amend any article of this Constitution or any section or part thereof by a two-thirds vote of the delegates registered at any annual session, provided that such amendment shall have been presented in writing in open meeting of the House of Delegates at the previous annual session and that it shall have been published at least once during the year, in the Journal or a bulletin of the Association.

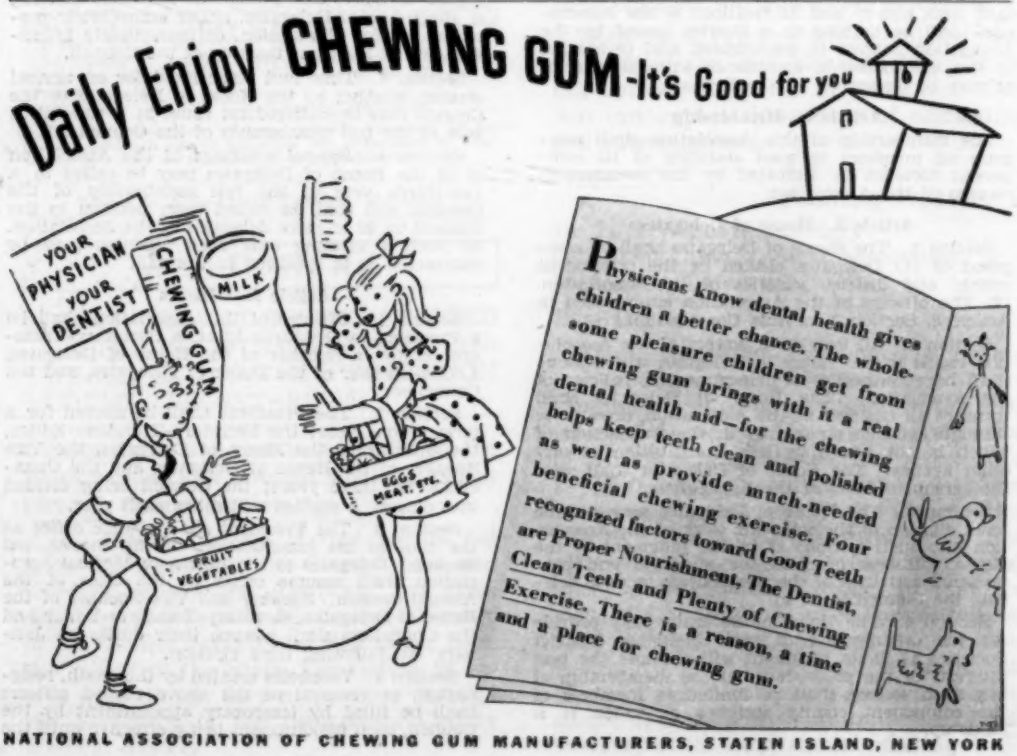
Article 14

Upon the adoption of this Constitution all previous Constitutions are thereby repealed, and all By-Laws and enactments in conflict with this Constitution are declared as of no effect.

Editorial Notes—Personal and General

DR. H. L. RAINS, Okmulgee, has been appointed County Health Superintendent of Okmulgee County.

DR. WALDO B. NEWELL, JR., Enid, has been appointed County Health Superintendent of Garfield County.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NATIONAL ASSOCIATION OF CHEWING GUM MANUFACTURERS, STATEN ISLAND, NEW YORK

DR. and MRS. WALTER HARDY, Ardmore, have returned from Rochester, Minn., where they spent two weeks in March.

DR. CARROLL M. POUNDERS, Oklahoma City, professor of pediatrics at the University of Oklahoma, was speaker on the program of the Dallas Southern Clinical Conference in Dallas, March 13th.

Southeastern Oklahoma

The Southeastern Oklahoma Medical Association held a meeting at Durant, Wednesday, April 12th, which was well attended. All sessions were held at the Bryant hotel, commencing at 10:30 a.m., with noon-day luncheon, and closing late in the afternoon. Dr. W. K. Haynie is president and Dr. John A. Haynie, secretary-treasurer. Following is the program:

Scientific program:

"Endocrinology in General Practice," Dr. T. H. Briggs, Atoka. Subject unannounced, Dr. E. H. Shuller, McAlester. "Sub-Acute Bacterial Endo-Carditis," Dr. B. B. Coker, Durant.

Afternoon program:

Invocation, Rev. W. T. White, pastor, Nazarene church, Durant. Welcome address, Dr. A. J. Wells, Calera. Response, Dr. L. S. Willour, McAlester. President's annual address, Dr. W. K. Haynie, Durant. "History, Progress, and Needs of the University of Oklahoma School of Medicine," Dr. Robert U. Patterson, Dean, Oklahoma City. "Progressive and Organized Medicine," Dr. W. A. Howard, president-elect, Oklahoma State Medical Association, Chelsea. "Some Aspects of Pathology and Surgery of Gall Bladder," Dr. John Munal, Holdenville. "Activities of the Present Session of the Legislature," Mr. R. H. Graham, executive secretary, Oklahoma State Medical Association, McAlester.

Officers were elected as follows: president, Dr. W. L. Shippey, Poteau; vice-president, Dr. J. S. Fulton, Atoka; Dr. John A. Haynie, Durant, succeeded himself as secretary-treasurer.

OBITUARIES

J. P. NELSON, M.D.

Dr. J. P. Nelson, of Beggs, Past President of the Okmulgee County Medical Society, was called from his labors February 18, 1939, due to a short illness from streptococcic infection which gained entrance through the throat. Dr. Nelson graduated from the Chicago University, School of Medicine, in 1903. He established his first practice in Piatt, Ill., moving to McAlester, Oklahoma, in 1908. He moved to Okmulgee County in 1915.

The 68-year-old doctor was a member of the Okmulgee County Medical Society, the Oklahoma State Medical Association, and the American Medical Association.

In the death of Dr. Nelson, Okmulgee County has lost an honorable public spirited citizen and gentleman of the highest type in our profession. During his long career as a physician, he always placed his own comfort secondary to the comfort of those he

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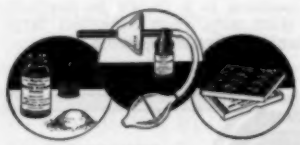

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served. It is tragic that the career of a gentleman so genial and a friend so true should end so suddenly, but for those who mourn him there is a solace that his was a happy life. He was a devoted husband, indulgent father, and truly a "friend to man."

His affability, beaming smile, and spontaneous good fellowship characterized him as one of the most lovable members of our society.

It is not easy to say farewell to such a man, nor to relinquish his genial smile and fine companionship, but pleasant memories will endure after time has eased the hurt of parting; and there is the consolation for us, his friends, and for those who loved him most, that there has been less suffering and more sunshine because he lived among us.

Now be it resolved by the Okmulgee County Medical Society that a copy of the foregoing written expression of our esteem be placed in the minutes of the County Society and a copy mailed to the office of the State Medical Association Journal and a copy be sent to the widow of the deceased.

Adopted unanimously.

J. C. Matheney,
S. D. Leslie,
O. M. Uling, Committee.

RECENT DEATHS

(Insufficient Data for Obituaries)

Dr. W. W. Gill, Enid, March, 1939.

New Books

CANCER, ITS DIAGNOSIS AND TREATMENT, By Max Cutler, M.D., Associate in Surgery, Northwestern University Medical School; Chairman, Scientific Committee, Chicago Tumor Institute; Consultant Tumor Clinic and Director Cancer Research, U. S. Veterans Administration, Hines, Illinois. AND Franz Buschke, M.D., Assistant Roentgenologist, Chicago Tumor Institute; Late Assistant Roentgen Institute University of Zurich; ASSISTED by Simeon T. Cantril, M.D., Director Tumor Institute, Swedish Hospital, Seattle; Late Assistant, Chicago Tumor Institute.

The purpose of this text, according to the authors in this preface, is to present the essential known clinical facts of cancer in diagnosis and therapy; to separate the second or proven evidence on cancer from this huge mass of controversial and confusing literature that has been produced since the advent of X-ray and radium irradiation.

Doctors Cutler and Buschke have accomplished their purpose admirably in this text, and are to be commended. The common types of cancer are presented under different chapters. The manner of presentation makes one feel he is reading some well planned lectures of the authors. The signs and symptoms of early and late cancer are discussed from the clinical aspect, chiefly as observed by the authors from their huge clinical material. Voluminous quotations on theory, physics and experimentation are conspicuous by their absence. Pathology and histology are discussed in their importance to proper therapy. The value of surgery, X-ray and radium therapy are carefully evaluated by the authors, and the preferential therapy is clearly stated in most instances. The details of therapy and the confusing details as used by different authorities are omitted.

The book is to be commended for its practicability.

Pneumococcic Meningitis

Four recoveries out of seven cases of pneumococcic meningitis treated with sulfanilamide are reported by Barbara A. Hewell, M.D., and A. Graeme Mitchell, M.D., Cincinnati, in The Journal of the American Medical Association for March 18.

This disease is an infection of the meninges, or membrane coverings of the brain and spinal cord, by a pneumococcic organism.

A review of the literature up to 1927 shows 150 authentic recoveries from this disease, the authors say. Approximately 30 additional recoveries have occurred during the years 1927 to 1937. Most of these have been attributed to spinal drainage and the administration of antipneumococcus serum or the drug, ethylhydrocupreine, but in general results with these treatment measures have been unsuccessful.

The authors point out that "in the ten years preceding 1937 there were in the Children's Hospital of Cincinnati and in the pediatric service of the Cincinnati General Hospital 23 children suffering from pneumococcic meningitis, the mortality in this group being 100 per cent. Since the use of sulfanilamide four of seven patients with the condition have recovered."

Stating that there are at least 30 cases of recovery from the disease, including four observed by them, in which part of the treatment consisted in the use of sulfanilamide or related compounds, the authors say that "it appears reasonable to conclude that sulfanilamide was responsible for these recoveries, since the mortality rate was so high with other forms of treatment. Recovery occurred with the use of different compounds, such as prontosil, sulfanilamide and sulfapyradine; that is to say, the data now available do not permit conclusions concerning the relative merit of these different compounds in the treatment of pneumococcic meningitis.

"There are at least eight cases of pneumococcic meningitis, including three observed by us, in which sulfanilamide was given and in which recovery did not follow.

"Of the patients receiving sulfanilamide who recovered, only one showed pneumococci in the blood culture. Of the eight patients receiving sulfanilamide who died, the blood cultures were positive for seven. This indicates that even with the use of sulfanilamide a blood stream infection with pneumococci is a factor in mortality and perhaps also that with such infection large doses of sulfanilamide should be tried."

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PROGRAM

Forty-Seventh Annual Session of the Oklahoma State Medical Association at Oklahoma City, May 1, 2, 3, 1939

General Information

Headquarters—Skirvin Hotel.

Registration and Commercial Exhibits—Fourteenth Floor, Skirvin Hotel. All physicians, except those outside the State and visiting guests, must hold membership receipt for the year 1939 before registering. Please attend to this at once, if you are not in good standing, by seeing your County Secretary.

Woman's Auxiliary — Annual Meeting, Tuesday, May 2nd, 10:00 A.M., Y. W. C. A. Luncheon, Tuesday, May 2nd, 1:00 P.M., Y.W.C.A. All other information will be given to visitors at the Registration Desk at the time of the Convention.

Guest Speakers—Dr. W. Wayne Babcock, Professor of Surgery, Temple University, Philadelphia; Dr. J. F. Hamilton, Willis C. Campbell Clinic, Memphis; Dr. Austin A. Hayden, Secretary, Board of Trustees, American Medical Association, and Chairman, Department of Oto-Laryngology and Ophthalmology, St. Joseph Hospital, Chicago; Dr. Edw. N. Smith, Instructor Orthopedics, State Medical Association Post Graduate Course, Oklahoma City.

Council—The Council will meet at 3:00 P.M., Monday, May 1st, Wilson Room, Mezzanine Floor, Skirvin Hotel, for the transaction of business affairs, and thereafter on call of the President.

House of Delegates—The House of Delegates will meet at 8:00 P.M., Monday, May 1st, Second Floor, Skirvin Tower, and at 8:00 A.M. Tuesday and Wednesday, May 2nd and 3rd, in the same place.

Resolutions—Any resolutions that you may desire to submit to the House of Delegates should be prepared and presented at the first meeting of the House of Delegates.

General Sessions—Will be held, beginning at 10:00 A.M., Tuesday, May 2nd, and 10:00 A.M., Wednesday, May 3rd, Venetian Room, Fourteenth Floor, Skirvin Hotel.

Public Health Meeting—Will be held at 1:30 P.M., May 1st, Empire Room, Skirvin Hotel. Program on page 140.

Oklahoma Pediatric Society—Meetings at Children's Hospital and Skirvin Hotel. See Program, page 140, for details.

Golf Tournament—The Oklahoma State Medical Association Golf tournament will be held on Monday, May 1st, at the Oklahoma City Golf and Country Club Course. The fee will be Two Dollars per player and the tournament round may be played any time Monday. If players would enjoy playing more golf than this, arrangements can be made by contacting Dr. Everett B. Neff, Chairman of the Golf Committee.

The tournament awards are unusually attractive and are donated by the following concerns in Oklahoma City: Prichard Oil Company; Caviness Surgical Company; Veazey Drug Company, and the Osler Drug Shoppe.

We are anticipating a large turnout and would like to make a request that all players who wish to play in the Handicap tournament bring with them their individual handicap scores, endorsed by their local professional. Locker room facilities are available free of charge to all players, members of the Association.

Clinics—Medical and Surgical Clinics are to be held by the Oklahoma City profession, Monday, May 1st. Program on pages 138, 139, 140, this issue.

Fraternity Dinners — Arrangements for these dinners will be made with the Committee of which Dr. Tom Wainright is Chairman.

Medical Reserve Officers—Dinner will be held Tuesday, 6 P.M., May 2nd, Parlor G, Skirvin Hotel. Reservations may be made through Dr. George Borecky, Chairman.

Women Physicians —

Tuesday May 2, at 7 P.M., in the Young Woman's Christian Association Building, there will be a dinner for all women members of the State Medical Association.

Reservations made through Dr. Ruth S. Reichmann, Chairman.

Committees In Charge

L. J. STARRY, General Chairman

Advisory Committee — Arthur White, Chairman; C. E. Clymer, LeRoy D. Long, R. M. Howard, Horace Reed, J. C. MacDonald, Chas. E. Barker, Henry H. Turner, C. J. Fishman.

Program Committee—N. P. Eley, Chairman; R. Q. Goodwin, D. W. Branham.

Scientific Exhibits—Robert H. Akin, Chairman; Basil Hayes, Elias Margo.

Commercial Exhibits—S. R. Fryer, Chairman; John H. Lamb, Hervey A. Foerster.

Finance—Ralph Bowen, Chairman; Hervey A. Foerster, Wm. H. Bailey.

Entertainment — Dick Lowry, Chairman; Henry C. Morrison, J. J. Caviness.

Stationery and Badges—Frank Harbison, Chairman; Jess Herrmann, J. H. Huggins.

Hotels—C. W. Lemon, Chairman; Floyd Moorman, O. G. Hazel.

Women Physicians — Ruth S. Reichmann, Chairman; Grace Hassler, Mary V. S. Sheppard.

Auxiliary—Mrs. L. C. McHenry, Chairman; Mrs. N. Price Eley, Mrs. J. F. Kuhn, Jr., Mrs. Lea A. Riely, Mrs. Nesbitt Miller, Mrs. W. K. Ishmael, Mrs. D. H. O'Donoghue, Mrs. Joe H. Coley.

Golf—Everett B. Neff, Chairman; W. J. Thompson, Robt. U. Patterson.

Reserve Officers — Dr. Geo. Borecky, Chairman; Leo Cailey, W. F. Keller.

Fraternity Dinners — Tom Wainright, Chairman; O. A. Watson, W. W. Rucks, Jr.

Section Hosts — J. P. Wolff, Chairman; Gerald West, O. A. Watson.

SECTIONS

All Sections will meet at 1:30 P.M., Tuesday, May 2nd, and at the same hour on Wednesday, May 3rd. Meeting places will be as follows:

Surgery — Venetian Room, Fourteenth Floor, Skirvin Hotel.

Medicine—Second Floor, Skirvin Tower.

Eye, Ear, Nose & Throat—Crystal Room, Mezzanine Floor, Skirvin Hotel.

Obstetrics & Pediatrics — Wilson Room, Mezzanine Floor, Skirvin Hotel.

Genito-Urinary & Syphilology—Room 1005, Skirvin Hotel.

Dermatology & Radiology — Room 1006, Skirvin Hotel.

CLINICS

Committee in Charge of Surgical Clinics (All Hospitals)

DR. W. K. WEST, Chairman (St. Anthony Hospital).

DR. J. C. MCDONALD (Wesley Hospital).

DR. OSCAR WHITE (University Hospital).

DR. R. L. NOELL, (Crippled Children's Hospital).

Operative Clinic

St. Anthony Hospital

South Surgery

May 1, 1939

Room 1—9:00-10:30, Dr. Horace Reed, General Surgery.

10:30-12:00, Dr. L. J. Starry, General Surgery.

Room 2—9:00-10:30, Dr. J. F. Kuhn and Dr. J. F. Kuhn, Jr., Gynecology.

10:30-12:00, Dr. Curt Von Wedel, Plastic Surgery.

Room 3—9:00-12:00, Dr. Leroy Long, General Surgery; Dr. LeRoy D. Long, Gen-

eral Surgery; Dr. Wendell Long, Gynecology.

Room 4—9:00-10:30, Dr. Harry Wilkins, Neuro-Surgery; Dr. J. D. Herrmann, Neuro-Surgery.

10:30-12:00, Dr. T. O. Coston, Eye Clinic.

North Surgery

Room 2—9:00-12:00, Symposium on Injuries to the Upper Extremity. Dr. H. Dale Collins, General Surgery; Dr. Geo. Kimball, General Surgery; Dr. D. H. O'Donoghue, Orthopedic Surgery; Dr. W. K. West, Orthopedic Surgery.

Room 5—9:00-10:30, Dr. R. H. Akin, Urology.

Obst. Dept.—9:00-10:30, Dr. E. P. Allen, Obstetrics.

10:30-12:00, Dr. J. B. Eskridge, Jr., Obstetrics.

Surgical Clinics

May 1, 1939

University Hospital

Room 1 — 9:00-10:30, Dr. C. E. Clymer, General Surgery.

10:30-12:00, Dr. F. M. Lingenfelter, General Surgery.

Room 2 — 9:00-10:30, Dr. Joseph Kelso, Gynecology.

10:30-12:00, Dr. Grider Penick, Gynecology.

Room 3—9:00-10:30, Dr. L. M. Westfall, Eye Surgery.

10:30-12:00, Dr. W. L. Bonham, Ear, Nose and Throat Clinic.

Room 4 — 9:00-10:30, Dr. Rex Bolend, Urology.

10:30-12:00, Dr. R. L. Murdoch, Proctology.

Obst. Dept.—9:00-10:30, Dr. W. W. Wells, Obstetrics.

10:30-12:00, Dr. Dick Lowry, Obstetrics.

Crippled Children's Hospital

Room 1—9:00-10:30, Dr. L. C. McHenry, Bronchoscopy.

10:30-12:00, Dr. John F. Burton, Plastic Surgery.

Room 2—9:00-10:00, Dr. E. Gordon Ferguson, Eye Clinic.

10:00-11:00, Dr. Paul C. Colonna, Orthopedic Surgery.

11:00-12:00, Dr. C. R. Rountree, Orthopedic Surgery.

Bone and Joint Hospital and McBride Clinic

9:00 to 12:00—Drs. Earl D. McBride, Elias Margo and Howard B. Shorbe, Orthopedic Surgery.

Wesley Hospital

General Surgery—Dr. J. H. Robinson, Dr. A. H. Bell.

General Surgery—Dr. Louis H. Ritzhaupt.

Nose and Throat—Dr. J. C. McDonald, Dr. Ed D. McKay.

Urological—Dr. Basil A. Hayes.

Gynecology—Dr. LeRoy H. Sadler.

Medical Clinics

May 1, 1939

Wesley Hospital

2:00 P.M.—Dr. D. D. Paulus, Gallbladder disease.

2:30 P.M.—Dr. W. W. Rucks, Jr., Heart disease.

3:00 P.M.—Dr. Walker Morledge, Diseases of the Chest.

3:30 P.M.—Dr. R. Q. Goodwin, Pneumonia.

4:00 P.M.—Round Table Discussion.

St. Anthony's Hospital

1:30 P.M.—Dr. Ray M. Balyeat, Allergic Clinic.

2:00 P.M.—Dr. Lea Riely, Blood Dyscrasia.

2:30 P.M.—Dr. Louis J. Moorman, Non-tuberculous pulmonary infections.

3:00 P.M.—Dr. John A. Roddy, Physical (mechanical) Treatment of Decompensated Cardio-Vascular Diseases.

3:30 P.M.—Dr. Price Eley, Gastro Intestinal Diseases.

4:00 P.M.—Round table discussion.

University Hospital

1:30 P.M.—Dr. A. W. White, Gastro Intestinal Diseases.

2:00 P.M.—Dr. C. J. Fishman, Neurological Clinic.

2:30 P.M.—Dr. Henry H. Turner, Endocrinology.

3:30 P.M.—Dr. Wann Langston, Cardiac Clinic.

3:30 P.M.—Dr. Phil McNeill, Chest Clinic.

4:00 P.M.—Round table discussion.

Oklahoma Pediatric Society

Monday, May 1, 1939

President, A. L. Solomon, Oklahoma City.

President-Elect, Hugh Graham, Tulsa.

Secretary, Ben H. Nicholson, Oklahoma City.

9:30 A.M.—Children's Hospital. Presentation of Cases and Clinical Program by the Pediatric Staff.

2:00 P.M.—Crystal Room, Mezzanine Floor, Skirvin Hotel.

"Nutrition of the Infant and Child."

The afternoon will be devoted to a discussion of this subject by Dr. P. C. Jeans, Professor of Pediatrics, University of Iowa. All members of the State Medical Association who are interested are invited to attend.

6:00 P.M.—Crystal Room, Skirvin Hotel. Dinner in honor of Dr. Jeans.

Council Meeting—3:00 P.M., Wilson Room, Mezzanine Floor, Skirvin Hotel.

Public Health Department Program

Monday, May 1, 1939

1:30 P.M., Empire Room, Skirvin Hotel

G. F. Mathews, State Health Commissioner, Presiding.

"Contact Examination in Syphilis Control —Methods and Results," Mack I. Shanholtz, Wewoka.

"A Backslider Testifies," Ned R. Smith, Tulsa.

"Management of A Maternity Service With Nurse Attendance At Delivery In A Rural Area—A Preliminary Report," Isadore Dyer, Tahlequah.

Election of Officers.

House of Delegates

Monday, May 1, 1939

8:00 P.M., Empire Room, Mezzanine Floor, Skirvin Hotel.

Tuesday, May 2, 1939

8:00 A.M. — House of Delegates Meeting, Empire Room, Mezzanine Floor, Skirvin Hotel.

General Scientific Section

Tuesday, May 2, 1939

Venetian Room, 14th Floor, Skirvin Hotel

10:00 to 10:40 A.M.—"Toxemias of Late Pregnancy," Dr. Edw. N. Smith, Instructor Post Graduate Medical Teaching, Oklahoma City.

10:40 to 11:20 A.M.—"Peripheral Vascular Disease: Diagnosis and Treatment," Dr. J. F. Hamilton, Willis C. Campbell Clinic, Memphis, Tenn.

11:20 to 12:00 Noon—"Surgery of the General Practitioner," Dr. W. Wayne Babcock, Temple University, Philadelphia.

Section on General Surgery

Tuesday, May 2, 1939

Charles M. O'Leary, Sponsor

Venetian Room, 14th Floor, Skirvin Hotel

Chairman—F. L. Flack, Tulsa.

Vice-Chairman—John E. McDonald, Tulsa.

Secretary — John F. Burton, Oklahoma City.

1:30 P.M.

"Injuries of the Brain and Spinal Cord"—Chairman's Address, F. L. Flack, Tulsa.

"The Anatomy of Operative Incisions"—E. Eugene Rice, Shawnee. Discussion: Oscar White, Oklahoma City.

"Septicemia"—Geo. A. LaMotte, Oklahoma City. Discussion: R. M. Howard, Oklahoma City.

"Diagnosis and Treatment of Infection and Gangrene in Extremities of Diabetics" W. D. Hoover, Tulsa. Discussion: Fred Watson, Okmulgee.

"Abdominal Decompression with Discussion of Means and Measures to Obtain Same"—A. S. Risser, Blackwell. Discussion: Cyril E. Clymer, Oklahoma City.

"Gall Bladder Surgery"—F. A. Hudson, Enid. Discussion: A. Ray Wiley, Tulsa.

(All papers presented before the Sections are property of the Association, for publication in the Journal and should be presented to the Secretary of the Section when read.)

Section on General Medicine

Tuesday, May 2, 1939

George J. Seibold, Sponsor

Second Floor, Skirvin Tower.

Chairman—Frank Nelson, Tulsa.

Vice-Chairman—E. R. Musick, Oklahoma City.

Secretary — Milam McKinney, Oklahoma City.

1:30 P.M.

"Presentable Data on Mercurial Diuresis" —Frederic G. Dorwart, Muskogee.

"Therapeutics in Allergy (Lantern Slides)" —E. Rankin Denny, Tulsa.

"Enemas: Their Uses and Abuses" — S. Charlton Shepard, Tulsa.

"The Use of Autohemotherapy Re-Inforced With Artificial Fever in the Treatment of Rheumatic Disease"—Wm. K. Ishmael, Oklahoma City.

"The Clinical Significance of Systolic Murmurs"—Fred C. Rewerts, Bartlesville.

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Section on Eye, Ear, Nose and Throat

Tuesday, May 2, 1939

Lee R. Emenhiser, Sponsor

Crystal Room, Mezzanine Floor, Skirvin Hotel

Chairman—E. H. Coachman, Muskogee.

Vice-Chairman—F. M. Cooper, Oklahoma City.

Secretary—James R. Reed, Oklahoma City.

1:45 P.M.

"Diphtheria Carriers"—E. H. Coachman, Muskogee.

"Tendon Transplantation in Ocular Muscle Paralysis"—Harvey O. Randel, Oklahoma City. Discussion: C. H. Haralson, Tulsa.

"Tempero-Mandibular Syndrome (Costen's Syndrome)"—Lee K. Emenhiser, Oklahoma City. Discussion: L. Chester McHenry, Oklahoma City.

"Remarks on Treatment of Dacryocystitis" —D. L. Edwards, Tulsa. Discussion: J. P. McGee, Oklahoma City.

"Postoperative Management of Tonsillectomies" — G. E. Haslam, Anadarko. Discussion: Paul J. Craden, El Reno.

"Removal of Non-Magnetic Foreign Bodies from Vitreous"—J. J. Caviness, Oklahoma City. Discussion: E. Gordon Ferguson, Oklahoma City.

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Section on Obstetrics and Pediatrics

Tuesday, May 2, 1939

Gerald Rogers, Sponsor

Wilson Room, Mezzanine Floor, Skirvin Hotel.

Chairman—C. W. Arrendell, Ponca City.

Vice-Chairman—Carl F. Simpson, Tulsa.

Secretary — Ben H. Nicholson, Oklahoma City.

1:30 P.M.

"Some Observations on the Diagnosis and Treatment of Pneumonias of Early

Childhood"—C. W. Arrendell, Ponca City.

"Further Observations on the Relationship of Vitamin A Deficiency in Pregnancy to Congenital Malformations"—G. R. Russell, Tulsa. Discussion: Clark Hall, Oklahoma City, and P. C. Jeans, Iowa City, Iowa.

"Convulsions in Childhood"—Jess D. Herrman, Oklahoma City. Discussion: C. E. Bradley, Tulsa, and Carroll M. Pounders, Oklahoma City.

"Anaesthesia and Analgesia in Obstetrics and Its Relation to Asphyxia Neonatorum"—H. J. Reichert, Moore. Discussion: Chas. Ed White, Muskogee, and Roy Emanuel, Chickasha.

"Laryngotracheo Bronchitis"—Geo. Felts, Oklahoma City. Discussion: L. Chester McHenry, Oklahoma City.

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Section on Genito-Urinary Diseases and Syphilology

Tuesday, May 2, 1939
Basil A. Hayes, Sponsor
Room 1005, Skirvin Hotel
1:30 P.M.

Chairman—Elijah S. Sullivan, Oklahoma City.

Vice-Chairman—Henry S. Browne, Tulsa.

Secretary — Robert H. Akin, Oklahoma City.

1:30 P.M.

"Bilharziasis" — Chairman's Address, Elijah S. Sullivan, Oklahoma City.

"Preliminary Report on the Use of Histidine in the Treatment of Hunner's Ulcer"—K. F. Swanson, Tulsa.

"Bladder Infections in the Female"—D. W. Branham, Oklahoma City.

"Urethral Strictures"—J. W. Rogers, Tulsa.

"Bladder Diverticuli" — J. Holland Howe, Ponca City.

"Hypernephroma, With Case Report" — Allen R. Russell, McAlester.

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Section on Dermatology and Radiology

Tuesday, May 2, 1939
Onis George Hazel, Sponsor
Room 1006, Skirvin Hotel

Chairman—W. A. Showman, Tulsa.

Vice-Chairman—E. D. Greenberger, McAlester.

Secretary—Hervey A. Foerster, Oklahoma City.

1:30 P.M.

Election of Officers

"The Common Skin Diseases of the Lower Extremities," Chairman's Address — Winfred A. Showman, Tulsa. Discussion: M. M. Wickham, Norman.

"Intestinal Perforations Roentgen Aspects" — Edw. D. Greenberger, McAlester. Discussion: Ralph E. Myers, Oklahoma City.

"Interstitial Radium Treatment of Cancer of Lower Hip"—L. K. Chont, Resident in Radiology, University Hospital, Oklahoma City. Discussion: Wm. Eastland, Oklahoma City.

"Atrophy of the Subcutaneous Fat—Case Report"—Onis G. Hazel, and John H. Lamb, Oklahoma City. Discussion: Chas. P. Bondurant, Oklahoma City.

"Common Lesions of the Oral Cavity, Local in Origin"—E. S. Lain, Oklahoma City. Discussion: Harry Green, Tulsa.

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PROGRAM GENERAL MEETING

Tuesday, May 2, 1939
8:00 P.M.
Second Floor, Skirvin Tower
L. J. STARRY, General Chairman, Presiding

Invocation—Rev. Frederick W. Beckerle, Oklahoma City.

Vocal Solo — "Morning" (Oley Speaks) Miss Mary Newman (Mary Lou of Showboat fame).

Introduction of Guests—L. J. Starry, Oklahoma City.

Address of Welcome—Carroll M. Pounders, President of Oklahoma County Medical Society.

Response—W. Pat Fite, Muskogee.

Vocal Solo — "On The Beautiful Blue Danube" (Strauss), Miss Mary Newman.

Introduction of President-Elect — H. K. Speed, Sayre, Retiring President.

President's Address—W. A. Howard, Chelsea.

9:30 P.M.

PRESIDENT'S RECEPTION AND DANCE

Silver Glade Room, Skirvin Tower

House of Delegates

Wednesday, May 3, 1939

8:00 A.M.—Meeting of the House of Delegates, Second Floor, Skirvin Tower.

General Scientific Section

Wednesday, May 3, 1939

Venetian Room, Fourteenth Floor
Skirvin Hotel

10:00 to 10:40 A.M.—*"Pseudomycotic Leg Ulcers"*—J. F. Hamilton, Memphis.

10:40 to 11:20 A.M. — *"Intestinal Malignancy"* — W. Wayne Babcock, Philadelphia.

11:20 to 12:00 Noon—*"The Democracy of American Medicine"*—Austin A. Hayden, Secretary of Trustees, American Medical Association, and Chairman Department of Oto-Laryngology and Ophthalmology, St. Joseph Hospital, Chicago.

Section on General Surgery

Wednesday, May 3, 1939

Charles M. O'Leary, Sponsor

Venetian Room, Fourteenth Floor,
Skirvin Hotel

1:30 P.M.

Election of Officers.

"Use of Vitallium Metal in Treatment of Fractures"—Frank A. Stuart, Tulsa. Discussion: D. H. O'Donoghue, Oklahoma City.

"The New Extra Pleural Pneumothorax Treatment" — Paul B. Lingenfelter, Clinton. Discussion: F. P. Baker, Talihina.

"Experiences with Internal Fixation in Fractures of the Hip"—Chas. R. Rountree, Oklahoma City. Discussion: John E. McDonald, Tulsa.

"Emergency Treatment of Hand Injuries" —Horton Hughes, Shawnee. Discussion: Ray Lindsay, Pauls Valley.

"Emergency Treatment of Airplane Injuries" — Roy L. Fisher, Frederick. Discussion: Clarence E. Northcutt, Ponca City.

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Section on General Medicine

Wednesday, May 3, 1939

George J. Seibold, Sponsor

Second Floor, Skirvin Tower

1:30 P.M.

Election of Officers.

"Gout: Its Systemic and Joint Manifestations"—E. Goldfain, Oklahoma City.

"Diaphragmatic Hernia" — E. G. Hyatt, Tulsa.

"Practical Management in Peripheral Vascular Disease" — B. E. Mulvey, Oklahoma City.

"Pancoast's Tumor: Case Report and Lantern Slides"—J. M. Byrum, Shawnee.

"The Private Practitioner and Vital Statistics"—Joe Rose, M.A., Oklahoma City.

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Section on Eye, Ear, Nose and Throat

Wednesday, May 3, 1939
Lee R. Emenhiser, Sponsor
Crystal Room, Mezzanine Floor,
Skirvin Hotel
1:45 P.M.

Election of Officers.

"Otomycosis of External Ear" — Hugh Evans, Tulsa. Discussion: A. H. Davis, Tulsa.

"Acute Glaucoma"—Edw. D. McKay, Oklahoma City. Discussion: F. M. Cooper, Oklahoma City.

"Nasal Plastic Operations" — M. C. England, Woodward. Discussion: Lee K. Emenhiser, Oklahoma City.

"Practical Technique of Office Refraction" —H. F. Vandever, Enid. Discussion: Leo F. Cailey, Oklahoma City.

"Heterophoria" — C. H. Haralson, Tulsa. Discussion: F. M. Cooper, Oklahoma City.

"Petrositis" — Theodore G. Wails, Oklahoma City. Discussion: Wm. L. Bonham, Oklahoma City.

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Section on Obstetrics and Pediatrics

Wednesday, May 3, 1939
Gerald Rogers, Sponsor
Wilson Room, Mezzanine Floor,
Skirvin Hotel
1:30 P.M.

Election of Officers.

"Later Reaction of Children With Asphyxia at Birth"—Chas. Ed. White, Muskogee.

"Sterility"—Dick Lowry, Oklahoma City.

"Use of X-ray in Obstetrics"—E. O. Johnson, Tulsa.

"Report on Post Graduate Work in Oklahoma"—Dr. Edward N. Smith, Oklahoma City.

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Section on Genito-Urinary Diseases and Syphilology

Wednesday, May 3, 1939
Basil A. Hayes, Sponsor
Room 1005, Skirvin Hotel
1:30 P.M.

Election of Officers.

"Perinephritic Abscess" — Chas. M. O'Leary, Oklahoma City.

"Renal Emergencies"—A. R. Sugg, Ada.

"Toxic States Seen in Urology"—Basil A. Hayes, Oklahoma City.

"Lymphopathia eVnerea" — Joseph Fulcher, Tulsa.

"Some Problems of Syphilis Control in Oklahoma"—David V. Hudson, Tulsa.

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State Dues will not be accepted at the Registration Desk, Annual Meeting, except through County Secretaries.

MUSKOGEE ARTIFICIAL LIMB AND APPLIANCE CO
G. LANGE, MGR.
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COMMITTEE REPORTS

These reports are made in compliance with provisions of the Constitution and By-Laws which call for publication of such matter in the issue of The Journal preceding the Annual Session.

Annual Report—Crippled Childrens Committee Oklahoma State Medical Association

The Oklahoma Society for Crippled Children still operates as an independent organization. The Secretary of this organization is Mr. Joe N. Hamilton, 313 Franklin Building, Oklahoma City, Oklahoma.

Under provision of Senate Bill 15, each county has a crippled children's fund, through the appropriation of .1 mill ad valorem tax. In some counties the fund is ample, but in many counties it is used very quickly.

The State Crippled Children's Hospital, located in Oklahoma City, is a part of the University of Oklahoma School of Medicine and University Hospital system, and receives crippled children directed to it by the local county judge, but the county does not pay this hospital for services rendered. The Hospital is supported by state appropriation. The act provides for a Commission for Crippled Children, composed of five members, and for a Committee on Standardization of Hospitals. There are three types of hospitals:

1. Crippled Childrens.
2. General Hospitals.
3. Standard Hospitals.

1. Crippled Children's: Referring chiefly to the State Crippled Children's Hospital located in Oklahoma City. Included in this group are hospitals which are approved only for orthopedic and plastic work.

2. The general hospital is one that has been approved by the American College of Surgeons. The general hospital can accept committed cases including orthopedic and plastic cases, provided there are specialists approved for this work on the staff. When there is not an approved orthopedic or plastic surgeon on the staff, chronic deformities and plastic cases must be referred to a hospital where approved specialists' services can be obtained.

3. The second type is that of the standard hospital which meets the standards set up by the Committee on Standardization.

Any hospital that has on its staff a general surgeon and an internist or general practitioner and a specialist in eye, ear, nose and throat, and is willing to keep records according to the standards of the College of Surgeons and meet the ordinary requirements of such rules, can make application to the Committee on Standardization for approval. These hospitals may accept acute cases of injury or sickness in children under 21 years of age, but cannot accept orthopedic or plastic cases, or chronic bone disease or deformities. The counties from where the children are committed pay the rate of $17.50 per week for the entire care of a child. No fees can be collected by the doctor for services rendered.

The provision of the Department of Welfare, State of Oklahoma, through the State Assistance Fund, now provides for care of crippled children under certain regulations. When the county has run out of funds this organization may be able to provide for the crippled children in the county until funds are available.

The following statistics will indicate the scope of the crippled children's activities over the past year:

Total number diagnostic clinics	38
Number children examined	1,258
Number counties in which clinics were held	36
Number doctors participating in clinics	14
Number doctors approved for crippled children's work:	
Orthopedic	14
Plastic	6
General	381
Hospitals approved:	
Crippled Children	9
General	9
Standard	36
Total	54
Number children hospitalized:	
Oklahoma Hospital for Crippled Children	2,400
Private	3,900
Total	6,300

Respectfully submitted,

Earl D. McBride, Chairman.

Copies:
Dr. Roy L. Fisher, Frederick.
Dr. M. B. Glisman, Okmulgee.

Report of Committee on Conservation of Hearing

Your Committee fells that the proper way to attack the problem of deafness is preventative. Certainly treatment of advanced hearing loss is unsatisfactory.

The Committee held a meeting in September with Mr. Baker Bonnell, State Supervisor of the program for the deficient of hearing, who works out of the office of the State Superintendent of Public Instruction. Mr. Bonnell is engaged and has been for some time in testing hearing of the children in our public schools and has collected a number of interesting statistics as to the number of hard of hearing children in the schools. He wished the Committee to endorse his work and to work out, if possible, a method of following up his work so that some definite benefit to the hard of hearing children might come about. His work is not a medical program and consists only of finding what individuals have deficient hearing among the groups tested. To result in any benefit to these hard of hearing individuals the work must be followed by medical examination and treatment when indicated.

With the cooperation of the chairman of this committee it was arranged for Mr. Bonnell to test the hearing of the children of the rural schools of Garfield County. A total of 1,707 children were examined. Three hundred and thirty-three of them, 13 per cent, showed a hearing loss of 15 or more sensation units. One hundred and eighty-three of these had a loss of 24 or more sensation units. Although the parents of each of these children found deficient in hearing were notified of the findings and were urged to seek medical attention, not one has so far reported to any of the five eye, ear, nose and throat specialists in the county seat for diagnosis or treatment.

This sort of result, or lack of result, is very discouraging. The apparent colossal indifference of the layman and perhaps of some physicians makes the committee doubt whether such a program is justified from an economic standpoint. If during the three months following the expenditure of so much effort and money we are not able to determine that any individual profited thereby we feel that there is some ground to be dubious as to the benefits of the program. However, the committee wishes to emphasize that this is a problem of education. No educational program brings results in a short period of time. The aim of the program must be first to make the public, including doctors, hearing conscious. We must first make it known that a large number of our children have

deficient hearing. Of course in individual instances the parents and perhaps the teachers know that certain children do not hear well. By repeated and widespread group testing however, we can make people aware of the magnitude of the problem. The next step then is to let them know that at least some of these children can be benefited by trteatment. A large number may have hearing loss beyond repair already but even in these a great deal may be done to prevent further loss. If these children are all neglected, certainly many of them will become more greatly handicapped as the hearing loss progresses. Treatment of advanced hearing loss is discouraging at best but the earlier these cases are brought under treatment, the better the results that may be obtained.

Your committee recommends that each County Medical Association at some time during the year have someone outline before the Society the purposes and aims of a program for conservation of hearing. It must be stressed that this, of necessity, be at first a campaign of education. By means of group audiometric testing of hearing with individual re-examination of those found deficient it is first determined who are deficient in hearing. This should be then followed by medical examination of these individuals. As laymen and doctors become aware of such a program, the next step is to make them aware that benefits can only come from it by means of treatment of afflicted persons. In this way and only in this way can a great number of our school children who have already some loss of hearing be prevented from becoming more greatly handicapped as they grow older and enter the economic life of our state.

H. F. Vandever,
L. C. McHenry,
J. B. Hollis.

Report of the Committee on Public Policy and Legislation

Your committee has attempted with the limited funds available to do the things we thought the membership of the State Medical Association desired. We have with the invaluable aid of our Executive Secretary, Mr. R. H. Graham, attempted by bulletin to keep the membership advised as to what is going on in the state from a legislative and public policy standpoint. We have secured much and valuable information with reference to legislative matters. We have only promoted the passage of one act by this legislature. We have constantly attempted and have so far been successful in blocking the passage of numerous bills which have been introduced in the legislature. that in our minds would be harmful to the health of the citizens of Oklahoma, however at the time this report is submitted the legislature has not completed its session and numerous bills are pending that are in our minds harmful. We expect to continue our activities along the same lines. We would like to recommend that in the future a more liberal allowance be made to this committee to cover its activities, than has been this year.

The committee desires to thank the membership of the State Medical Association, the officers of the County Societies and the co-ordinating members of this committee for the invaluable aid they have rendered. The Committee desires also to thank the officers of this Association for their cooperation.

There will be at the state meeting a further report submitted to the House of Delegates.

Finis W. Ewing, Chairman
R. O. Early
Tom Lowry
O. C. Newman

ANNUAL REPORT
of the Secretary-Treasurer-Editor
April 1, 1938, to March 31, 1939

TO THE MEMBERSHIP OF THE
OKLAHOMA STATE MEDICAL ASSOCIATION:

In compliance with the Constitution and By-Laws the Secretary-Treasurer-Editor herewith submits his report to the House of Delegates as to the various activities of his office during the past year.

Detailed statements of all financial transactions, duplicate deposit certificates and other business matters have been submitted to the Council and the audit published with this report.

As to the membership of the organization I will say that we have had a decided decrease, the membership last year being 1,465 and up until this time we have received dues from 1,064 members. Undoubtedly the decrease is due to the increase in dues. With our present membership we will be able to certify two delegates to the American Medical Association.

We have lost by death about the usual number of members and the list of these departed ones will be published with the report of the Necrology Committee.

Medical Defense: The following cases have either been settled, dropped or disposed of in the following manner:

Settled:

Stephens County, No.....

Pending:

Caddo County, No. 9407.
Carter County, No. 16262.
Choctaw County, No. 8644.
Logan County, No. 1693.
Mayes County, No. .....
Pontotoc County, No. .....

In addition to the above the following cases are now pending, the progress of which is unknown as they are pending or dormant in the courts:

Blaine County, No. .....
Carter County, No. .....
Craig County, No.
Hughes County, No.
Payne County, No. .....
Pottawatomie County, No. .....

Advertising: During the year we have maintained practically all of the advertising contracts of the previous year. We have received the further support of the Cooperative Medical Advertising Bureau and as a result of this received a dividend check the first of the year for $490.82, which is one of the largest dividend checks we have ever received. Our advertising has maintained the high standard of previous years; we have accepted no advertising except of products approved by the various councils of the American Medical Association and the membership can always be sure that any advertised material, be it drug, apparatus or institution, has been thoroughly investigated and found to be of high ethical quality.

The Journal during the past year has not only maintained its usual size but several numbers have shown an **increase** in size and with our new contract with the publisher have been distributed at an approximate cost of 20½ cents per copy. This of course without the mailing expense.

The members of this Association are certainly indebted to our abstractors. These busy physicians and surgeons have given of their time to maintain

the high standard of the abstract department. The very latest material being abstracted from the American Medical literature, and Dr. LeRoy Long very often has abstracted some of the outstanding French contributions. These contributions made by the physician at the head of the various abstract departments does much to maintain the high standard and is one of the most interesting departments of our publication.

You will note in the financial report that the Journal has shown a financial profit during the past year and the Secretary-Treasurer always feels that considerable has been accomplished when the Journal can pay its way.

Unfortunately we are able to publish but few of the Committee reports as they have not been submitted to the Journal, but will undoubtedly be submitted to the House of Delegates.

You will notice that our indebtedness to the First National Bank of McAlester has been reduced $2,000.00; we have contributed $2,000.00 to the support of the Post Graduate Course in Obstetrics; we have met the increased expense incurred by the employment of an Executive Secretary; some money has been appropriated by the Council for the work of the Legislative Committee; $750.00 has been authorized for the use of the Committee on the Study and Control of Cancer, and current bills have all been paid.

The Post Graduate department in Obstetrics has been carried on throughout the year under the direction of the Post Graduate Medical Teaching Committee and the work of the Instructor, Dr. Edw. N. Smith, has been very acceptable and we have received many very complimentary letters as to his very efficient work.

AUDIT REPORT

Oklahoma State Medical Association
Dr. L. S. Willour, Secretary-Treasurer
McAlester, Oklahoma

For Period from April 1, 1938, to March 31, 1939
By J. K. Pemberton, McAlester, Oklahoma

April 5th, 1939

Dr. H. K. Speed, President,
Oklahoma State Medical Association,
Sayre, Oklahoma.

Dear Dr. Speed:

Upon request, I have audited the books of account, records and investments of

Dr. L. S. Willour, Secretary-Treasurer,
Oklahoma State Medical Association,
McAlester, Oklahoma.

for the period beginning April 1st, 1938, and ending March 31st, 1939, and submit the following schedules, together with comments and supporting exhibits.

Cash receipts were traced into the bank through a detailed check of the items received, against deposit tickets as shown by the files of the bank. Cash expenditures and disbursements were checked against bank records, all vouchers and checks were examined and compared with original entries; endorsements scrutinized and found to be in order.

In company with Dr. L. S. Willour, Secretary-Treasurer, I have examined the following investments which are kept in a safety deposit box in the First National Bank, McAlester, Oklahoma, which box is registered in the name of the Oklahoma State Medical Association; except at this date the bonds are held by the bank as collateral to a loan totaling $5,000.00 executed by the Oklahoma Medical Association:

GENERAL FUND:

3¼% U. S. Treasury Bonds of 1944-46—

Bond Number	Par Value	
94180L	$ 500.00	
94181A	500.00	
95099K	1,000.00	$2,000.00

MEDICAL DEFENSE FUND:

3¼% U. S. Treasury Bonds of 1943-45—

Bond Number	Par Value	
878J	$1,000.00	
879K	1,000.00	
880L	1,000.00	$3,000.00

April 15th, 1939, coupons were attached to the bonds together with all subsequent coupons.

I find upon examination the following Notes Payable owing by the Association:

NOTES PAYABLE:

To The First National Bank, McAlester, Oklahoma (Secured by $5,000.00 par 3¼% U. S. Treasury bonds as described above) $5,000.00

I further find that proper resolutions were passed authorizing said loan, and said loan therefore is a valid and binding obligation of the Oklahoma State Medical Association.

I respectfully submit the following Audit and Report for your information.

J. K. PEMBERTON, Auditor.

* * * *

The above and foregoing statement and following Audit is submitted as my report for the period beginning April 1st, 1938, and ending March 31st, 1939.

L. S. WILLOUR, Secretary-Treasurer,
Oklahoma State Medical Association.

THE FIRST NATIONAL BANK
McAlester, Oklahoma
April 5th, 1939

Dr. L. S. Willour, Secretary-Treasurer,
Oklahoma State Medical Association,
McAlester, Oklahoma.

Dear Dr. Willour:

This is to certify that according to our records at the close of business on March 31st, 1939, the following accounts reflected a credit balance, subject to check, as follows:

Oklahoma State Medical Association:

General Fund	$9,696.93
Medical Defense Fund	895.50

It is further certified that the following direct obligations of the Oklahoma State Medical were owing to the First National Bank, McAlester, Oklahoma, at the close of business on March 31st, 1939, as follows:

Date of Note	Description of Collateral	Date Due	Amount
2-10-37	3¼% U. S. Treasury Bond of 1944-46 No. 95099K $1,000.00 par.	4-10-39	$1,000.00
2-18-37	3¼% U. S. Treasury Bonds of 1944-46 Nos. 94180L, 94191A, 2 @ $500.00 each; & 3¼% U. S. Treasury Bonds of 1943-45 Nos. 878J, 879K, 880L being 3 @ $1,000 each Total	4-10-39	$4,000.00

Yours very truly,
J. K. PEMBERTON,
Vice-President and Cashier.

Oklahoma State Medical Association
Dr. L. S. Willour, Secretary-Treasurer
McAlester, Oklahoma
March 31st, 1939

BALANCE SHEET

ASSETS

CURRENT ASSETS:		
First National Bank, McAlester, Oklahoma:		
General Fund	$8,740.76	
Medical Defense Fund	895.50	$9,636.26
INVESTMENTS—U. S. GOVERNMENT BONDS:		
General Fund (Par Value)	2,000.00	
Medical Defense Fund (Par Value)	3,000.00	5,000.00
TOTAL		$14,636.26

LIABILITIES

EXCESS OF ASSETS OVER LIABILITIES:		
Balance March 31st, 1938	$8,736.37	
Less: Post Graduate Fund	2,630.08	$6,106.29
Add:		
Excess of Income over Expenditures:		
General Funds	3,476.54	
Medical Defense Fund	1,197.50	
Legislative Fund	1,144.07	$9,636.26
NOTES PAYABLE:		
To First National Bank, McAlester, Oklahoma, (Secured)		5,000.00
TOTAL		$14,636.26

Oklahoma State Medical Association
Dr. L. S. Willour, Secretary-Treasurer
McAlester, Oklahoma
April 1, 1938, to March 31, 1939

CASH RECEIPTS AND DISBURSEMENTS

GENERAL FUND:		
Balance March 31st, 1938		$ 5,764.22
RECEIPTS:		
Advertising	$ 5,631.57	
Exhibits	81.00	
Memberships	12,296.00	
U. S. Bond Interest	227.50	
Repayment of Advance	28.72	
Rebate Interest	6.20	
Transfer from Medical Defense Fund	1,500.00	
Transfers from Special Fund (Balance)	660.00	
Total Receipts		20,430.99
Total Cash to Account For		$26,195.21
DISBURSEMENTS:		
Dr. L. S. Willour, Sec.-Treas. Salary to 4-1-39	$ 2,400.00	
Oltha Shelton: Ass't. Sec. Salary to 4-1-39	1,500.00	
R. H. Graham, Executive Sec. Salary	850.00	
Nigel Gilbreath, Ass't. Ex. Sec. Salary	135.00	
Other Office Salaries	25.00	
Traveling Expense Ex. Sec.	84.06	
Social Security Tax	62.18	
Rent	300.00	
Telephone & Telegraph	112.14	
Postage	354.44	
Stationery and Printing	235.76	
Treasurers Bond & Audit	75.00	
Printing Journal	5,069.18	
Press Clipping Service	36.00	
Expense Annual Meeting	645.74	
Expense Executive Council and Delegates	554.44	
Expense—Legislative	274.50	
Insurance	8.52	
Office Expense—Executive Secretary	77.05	
Interest Paid on Borrowed Money	75.00	
Office Repairs & Equipment	19.67	
Sundry Expense	27.62	
Payment on Note	2,000.00	
Advance to Public Policy & Public Relations Committee	375.00	
Payment to Post Graduate Fund	2,158.15	
Total Disbursements		17,454.45
Balance on Hand March 31, 1939		$ 8,740.76
MEDICAL DEFENSE FUND:		
Balance March 31, 1938		$ 1,198.00
RECEIPTS:		
Fees Collected	$ 1,200.00	
U. S. Bond Interest	97.50	1,297.50
Total Cash to Account For		$ 2,495.50
DISBURSEMENTS:		
Transfer to General Account	$ 1,500.00	
Medical Defense of Members	100.00	
Total Disbursements		1,600.00
Balance on Hand March 31, 1939		$ 895.50

CASH ON DEPOSIT

Oklahoma State Medical Association
Dr. L. S. Willour, Secretary-Treasurer
McAlester, Oklahoma
March 31, 1939

FIRST NATIONAL BANK,
McAlester, Oklahoma.

GENERAL FUND:			
Balance as per Records			$ 8,740.76
ADD:			
Outstanding Checks:	No.	Amt.	
	3617	4.00	
	3574	1.00	
	4115	4.00	
	4663	6.50	
	4677	6.50	
	4701	6.50	
	4878	3.70	
	4879	60.00	
	4880	272.88	
	4882	26.15	
	4885	550.94	
	4886	3.00	
	4887	11.00	956.17
Balance as per Bank Statement and Verification Letter			$ 9,696.93

MEDICAL DEFENSE FUND:

Balance as per Records	$ 895.50
Outstanding Checks:	None
Balance as per Bank Statement and Verification Letter	$ 895.50

INCOME AND EXPENDITURES

Oklahoma State Medical Association
Dr. L. S. Willour, Secretary-Treasurer
McAlester, Oklahoma
For Period from April 1, 1938, to March 31, 1939

GENERAL FUND:

INCOME:

Advertising	$ 5,631.57	
Exhibits	81.00	
Memberships	12,296.00	
U. S. Bond Interest	227.50	
Repayment of Advance	28.72	
Rebate Interest	6.20	
Received from Special Fund (Balance)	660.00	
Total Income		$18,930.99

EXPENDITURES:

Salary Secretary-Treasurer	2,400.00	
Salary Ass't. Secretary	1,500.00	
Salary Executive Secretary	850.00	
Salary, Ass't. Ex. Sec.	135.00	
Other Office Salaries	25.00	
Traveling Expense Executive Secretary	84.06	
Social Security Tax	62.18	
Rent	300.00	
Telephone & Telegraph	112.14	
Postage	354.44	
Stationery and Printing	235.76	
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Printing Journal	5,069.18	
Press Clipping Service	36.00	
Expense Annual Meeting	645.74	
Expense Executive Council and Delegates	554.44	
Expense—Legislative	274.50	
Insurance	8.52	
Office Expense—Executive Secretary	77.05	
Interest Paid on Borrowed Money	75.00	
Office Repairs & Equipment	19.67	
Sundry Expense	27.62	
Advance to Public Policy and Public Relations Committee	375.00	
Payment to Post Graduate Fund	2,158.15	
Total Expenditures		15,454.45
Balance—Net Excess of Income over Expenditures		$ 3,476.54

MEDICAL DEFENSE FUND:

INCOME:

Fees collected	$ 1,200.00	
U. S. Bond Interest	97.50	$ 1,297.50
Total Income		$ 1,297.50

EXPENDITURES:

Medical Defense of Members	100.000	100.00
Balance—Net Income Over Expenditures		$ 1,197.50

Influx of Refugee Physicians Focuses Attention on Citizenship Question

The influx of refugee physicians has focused attention on the question of citizenship in the granting of licenses to practice medicine.

J. E. McIntyre, M.D., Lansing, Mich., secretary of the Michigan State Board of Registration in Medicine, in The Journal of the American Medical Association for March 18 says:

"It is interesting to note that most states have already required either United States citizenship or first papers as a condition precedent to taking the state board examinations. Only the following states require neither citizenship nor first papers at the present time: California, Illinois, Massachusetts, New Hampshire, New Mexico, New York, Ohio, Texas, Utah and the District of Columbia. Either by state law or by a ruling of the state boards of registration in medicine, the following states now require full United States citizenship: Alabama, Arkansas, Delaware, Florida, Georgia, Indiana, Kansas, Kentucky, Michigan, Missouri, Montana, Nevada, Nebraska, North Carolina, North Dakota, Oklahoma, South Carolina, South Dakota, West Virginia, Wyoming and, except in the case of Canadians, Arizona, Iowa and Minnesota.

"States now requiring that first papers for United States citizenship must be taken out are Colorado, Connecticut, Idaho, Louisiana, Maine, Mississippi, New Jersey, Pennsylvania, Rhode Island, Virginia, Washington and Maryland except in the case of Canadians. In addition to these requirements there is a great variety of other restrictions.

"In some states, such as South Carolina and Wyoming, foreign graduates are not accepted under any circumstances. In some other states there is a requirement of a senior year's work in an approved United States medical school and a one year rotating internship in a United States hospital approved for internship training. Still others require that the candidates pass the National Board examination and apparently there is no uniformity whatever as to these special requirements."

Place of Sulfanilamide in Pneumonia Treatment Not Yet Established

The future specific treatment of pneumonia probably will be with a combination of sulfanilamide and pneumococcus serum, especially in those cases caused by types II and III pneumococci, Alvin E. Price, M.D., and Gordon B. Myers, M.D., state in The Journal of the American Medical Association for March 18.

Although the results obtained from using the drug in the treatment of pneumonia are encouraging, the two men point out, the place of sulfanilamide in the treatment of the disease is not yet definitely established.

Their paper in The Journal is a preliminary report, based on 115 cases of pneumococcic pneumonia treated with uniform doses of sulfanilamide, 40 cases with Felton serum and 94 controls with no specific treatment.

The death rate was 15.7 per cent for the group of patients treated with sulfanilamide and 30.8 per cent for the controls. The death rate for 57 patients with types I, II, V, VII and VIII pneumonia treated with sulfanilamide was 10.5 per cent, whereas it was 27.5 per cent for the 40 patients with the same types of pneumonia treated with serum.

Of 21 patients with pneumococci in the blood

stream treated with sulfanilamide seven died, of 12 treated with serum six died and of 15 controls 13 died.

Some adverse reactions due to sulfanilamide treatment occurred. In 5.2 per cent of the patients treated with sulfanilamide a severe anemia developed and in an additional 18.2 per cent moderate secondary anemia, influenced by the infection, developed.

DRUG TREATMENT IN CORONARY DISEASE

Drugs have practically no value as a speific treatment for coronary disease if the patient is free of symptoms, Harry Gold, M.D., New York, declares in The Journal of the American Medical Association for Jan. 7. The one exception is syphilis involving the blood vessels of the heart.

At the present time there are no drugs that definitely influence the course of disease of the muscles and blood vessels of the heart. However, when pain exists certain drugs are beneficial.

The nitrites are the preferred drugs in the treatment of effort angina (pain on effort). The nitrites do not impair awareness of pain but abolish the mechanism that causes it.

The nitrites are not entirely free of disagreeable effects. They may bring about such minor symptoms as flushing of the face, headache, a sensation of throbbing and tension in the head, palpitation and, in excessive doses, collapse. Sometimes these symptoms can be averted by reducing the dose without losing the effect of the drug.

The dose should be taken at the first suggestion of the oncoming pain. Some patients, guided by a mistaken notion that danger of inquiry or the development of habit is involved in frequent use of the nitrites, wait for the full development of pain.

The frequent use of the nitrites will neither lead to dependence on them nor reduce their efficacy.

Of the numerous other drugs used in heart disease, the xanthine compounds exert no action that is useful for the routine treatment of heart pain.

The purine bases are extremely valuable in promoting the secretion of urine in congestive heart failure.

In a typical case of coronary thrombosis in which there is agonizing pain, anguish and terror of impending death, morphine is the preferred drug. It not only relieves pain but also abolishes the desire to move about and in many instances gives rise to a sense of well-being which is quite apart from its analgesic effects.

By reducing nervous excitability the barbiturates decrease the number and severity of the attacks of effort angina. By means of the barbiturates fear, anxiety and restlessness in acute coronary thrombosis may be controlled.

Digitalis is useful in heart failure and in certain disorders of heart rhythm.

The indications for drugs promoting the secretion of urine include in part those for digitalis. These drugs are useful for the control of congestive heart failure and attacks of recurrent labored breathing.

While in many instances great suffering is spared and a life is saved through the judicious use of these many drugs, the major part in the control of this disease lies not in drugs, but in expert guidance in making the mental and physical adjustments which will enable these patients to carry on within their capacity without symptoms of heart disease.

State Dues will not be accepted at the Registration Desk, Annual Meeting, except through County Secretaries.

Animal Experimentation and Scientific Medicine Endorsed By Voters

The voters of California and Colorado, November 8, by overwhelming majorities emphatically rejected proposals made in those states to undermine the structure of scientific medicine, The Journal of the American Medical Association for November 19 says. In California an initiative humane pound law, so called, proposing to cripple scientific research by hampering animal experimentation, was decisively defeated. In Colorado an initiative measure proposed by a group of chiropractors, to debase the quality of medical care in the state by repealing the basic science act and by destroying other safeguards that have been erected to assure adequate and scientific medical service, was met by an avalanche of negative votes, running as high as ten to one in some counties.

In Oklahoma an initiative measure that would have sanctioned practices not conducive to public welfare failed to get on the ballot, because of court action instituted by the medical profession. In Ohio a chiropractic initiative somewhat similar to the Colorado initiative ded abornng, the cultist sponsors apparently becoming disheartened shortly after the proposal was submitted to the attorney general for the approval as to form. Petitions in Ohio were not circulated and the proposed initiative measure was not submitted to the people for a vote.

The medical associations in the states named assumed the lead in thwarting the selfish interests behind these proposals, interests that would subordinate the public welfare to their own private ends. In California and Colorado the state medical associations, aided by many lay and other professional groups and by public spirited citizens, informed the people fully of the dangers implicit in the proposals. To bring these dangers to the attention of the voters necessitated great sacrifices of time and money, but the results show that such

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sacrifices were well worth while and indicate that an informed electorate will support scientific medical care under proper legal and ethical safeguards.

Radio Short Waves Now Used in Giving Fever Treatment

The use of radio short waves to produce artificial fever for the treatment of disease is a striking demonstration of the relationship of progress in various fields of knowledge, Richard Kovacs, M.D., New York, declares in the May issue of Hygeia, The Health Magazine.

Such disease as gonorrhea, St. Vitus's dance, some forms of arthritis and of bronchial asthma, sinus disease and neuritis are being successfully combated by short wave treatment, the author points out.

Describing the method employed, Dr. Kovacs explains that local heating of any part of the human body is produced by placing it in the energy field of a short wave radio set.

This method is known as short wave treatment or short wave diathermy. An older method of diathermy involves the placing of plates in direct contact to the body or an extremity and the passing of a high frequency electric current through the afflicted part. The newer form of diathermy has the advantage that it can be applied to pratically any surface or part of the body and its heat is more uniform.

"Fever treatment must be combined with other recognized forms of treatment, by diet and if necessary by surgery," the author observes. "Experienced medical advice and skilled nursing care are more important in administering artificial fever than the best apparatus in unskilled hands.

"The large majority of medical men agree that it is the well directed and well controlled deep heating effect of radio waves on the human body which brings about relief. The idea that certain wave lengths exert special effects on certain diseases is untenable or at least not proved."

For the man listening to his radio, Dr. Kovacs admits, the use of radio waves for medical treatment is sometimes anything but a blessing. "When some of the apparatus used for treatment is improperly constructed," he explains, "it may become a nuisance not only for every radio set which derives electricity from the same power line, but for those within several miles.

"Steps are under way to abate such nuisance by cooperation of the medical profession and reliable manufacturers of medical equipment. All apparatus may be properly screened to minimize interference, or a special wavelength may be allocated for treatment purposes.

"Induced fever," says the author, "has proved especially effective in disease caused by so-called 'parasitic' germs. Some germs, such as those of gonorrhea, have become so completely used to living in the human body at its normal temperature that an increase of temperature by a few degrees affects them.

"Artificial fever maintained for some hours either directly destroys the germs of gonorrhea or sufficiently stimulates the natural defensive forces of the body to stop the further growth of germs.

"In joint inflammation or arthritis caused by gonorrhea, almost dramatic relief from pain and swelling can be accomplished by artificial fever. Similar results have been accomplished in gonorrhea inflammation of the eye and in stubborn infections of the pelvic organs in both women and men.

"Fever treatment is also effective in the disease of children known as St. Vitus's dance, as well as in certain forms of bronchial asthma resisting all other forms of treatment.

"Short wave diathermy is employed by physicians for treating inflammatory conditions of inner organs and of joints. These include some forms of arthritis, sinus disease and rheumatic conditions such as neuritis. Repeated treatment by diathermy brings about an increased flow of blood, which speeds up the return of normal function; it also relieves pain due to nerve irritation."

Explains Means of Preventing the Reactions From Vein Feedings

Means of preventing the fever and chills which may follow intravenous or vien feedings are explained by Charles M. Nelson, M. D., Richmond, Va., in The Journal of the American Medical Association for April 8.

Although these reactions have been commonly attributed to various causes, Dr. Nelson says that experiments show the real factor is bacterial contamination of the distilled water used in the solutions for these feedings.

Boiling the water to be used for six hours will destroy the fever-producing agent. Autoclaving (sterilization under steam pressure) for three or four hours will also destroy it. The usual sterilization period tends to enhance its growth.

Even when sterilized by the usual method, the tubing and flasks used in giving intravenous feedings may sometimes cause fevers, as the fever-producing factor may have lodged in them previously while a solution (not autoclaved) was passing through the apparatus.

Dr. Nelson points out that "any organism that is capable of elaborating a fever-producing substance, which thrives at room temperature and which is a common contaminant may be the offender. No organism will ever be the offender if the distilled water is taken directly from the still—most storage tanks are contaminated by backflow of air when the still cools—and autoclaved immedately."

Gastroscopy Aids Diagnosis

The diagnosis of cancer, ulcer and hemorrhage of the stomach and chronic gastritis is aided by gastroscopy (the direct visualization of the stomach), Elmer B. Freeman, M.D., Baltimore, reports in The Journal of the American Medical Association for January 21.

Before use of the gastroscope (a flexible illuminated tube) will give its utmost in results the physician must be familiar with the appearance of the normal stomach.

Gastroscopy is also of value in determining the results of treatment. The author declares that there no longer need be any doubt as to whether a gastric ulcer is healing under medical care, as this can be definitely determined gastroscopically. Gastroscopic observations have proved beyond a question of doubt that gastric ulcer may be completely healed under appropriate medical treatment.

The author believes that cancer of the stomach can be diagnosed by gastroscopic study before it can be determined by X-rays, thereby permitting early operation when complete cure is generally impossible.

State Dues will not be accepted at the Registration Desk, Annual Meeting, except through County Secretaries.

ABSTRACTS : REVIEWS : COMMENTS *and* CORRESPONDENCE

SURGERY AND GYNECOLOGY

Abstracts, Reviews and Comments from
LeRoy Long Clinic
714 Medical Arts Building, Oklahoma City

Painful Lumbo-Sacral Syndrome (Syndrome Douloureux Lombo-Sacre): J.-Ed. Samson, Chirurgien de l'hopital du Sacre-Coeur, Montreal; L'Union Medicale du Canada; December, 1938, Vol. 67, No. 12, page 1267.

This is a very practical contribution upon an extremely important subject. The author insists upon a careful examination of persons who have pain in the lumbo-sacral region because he believes that pain in that region is due very often to demonstrable pathology, provided a careful examination is made.

In reviewing the anatomy, the author calls attention to a combination of diarthrodial and amphiarthrodial articulations of the sacrum with the ilia, while there is a true amphiarthrodial articulation between fifth lumbar and sacrum. Taking into consideration the types of articulations, together with the contiguous nerve filaments, ligaments and interoseus cartilages, one has the ground work of the anatomy of this important region.

In the standing position all these things begin to complicate themselves, in connection with the multiple movements of the different articulations. In studying this situation, one must realize that he has before him the principal connections between the trunk and the pelvis.

Each of these articular surfaces is subject to organic disturbance with concomitant hyperostosis, congenital malformation, defective position, inflammatory lesions, traumatic or infectious. Practically all these conditions are accompanied by pain, but the pain may be due to variable causes. The author remarks, "We are, you will see, far away from the time when one classified, without frowning, this immense chapter in three words: rheumatism, lumbago, and Pott's disease." (Nous sommes, vous le voyez, bien loin du temps ou l'on reduisait, sans sourciller, ce chapitre immense en trois mots: rhumatisme, lumbago, mal de Pott.)

Today one speaks frequently in the surgical literature about sacralization, lombalisation, spondylosis, spina-bifida-occulta, spondylolisthesis, fasciitis, myositis, hernia of the intervertebral disc, chronic arthritis involving the lumbo-sacral joint, etc.

In connection with the congenital malformations the author indicates that it is important not to conclude that every congenital malformation causes lumbo-sacral pain. At the same time, it is his conclusion that the presence of congenital defects, or acquired defects, such as osteoarthritis, may enhance difficulties that might follow trauma.

Particular attention is directed to the careful taking of a history. He quotes Leriche as saying, "Many times the striking point in connection with the history of the patient escapes us because we do not know how to listen, or because we listen to the history with preconceived ideas." This is a very free translation. The original is as follows: "Bien des fois, nous ratons notre coup aupres d'un malade, parce que nous ne savons pas l'ecouter, ou que nous ecoutons son histoire avec des idees preconceues." In other words, we miss fire in our efforts. He quotes another author, Mathieu Weil, who says, "We group all the patients whose histories we do not understand and whose suffering we are not able to demonstrate in the class of pithiatics." (Pithiatism is a term that was suggested by Babinski as the equivalent of hysteria.)

The sex of the patient, the condition of life, and the age are important. In a group of 109 collected by the author there were 65 females and 44 males. In connection with the condition of life, 61 were laborers and 44 were of sedentary habits. In connection with the age, 20 were under 20 years of age, 65 between 20 and 50 years, and 24 from 50 to 70 years of age.

In middle life it has been found, according to Weil, quoted by the author, that the lumbo-sacral syndrome is frequently found about the menopause in women, and in the case of men of like age the syndrome is more frequently in connection with traumatic or infectious disease—most often in connection with trauma because of the exposure of the male at that age to trauma.

It is preferred that the examination of the patient be made, if possible, during the stage when there are no very acute symptoms. As a rule, the patient presents himself with a distinctly lumbo-sacral syndrome in the acute stage, characterized by symptomatic sciatica; or he presents himself during the chronic stage of the lumbo-sacral syndrome. In the latter case, the diagnosis may be a little more difficult but, after all, the data secured by a systematic clinical examination will be of more value. One must determine whether the pains are severe, persistent, continued or intermittent. He ought to ascertain, if possible, whether the patient suffers more because of the duration of the pain than because of the intensity of it. He ought to try to secure information from the patient as to the exact site of the pain, the patient designating the areas where pain is pronounced, and he ought to ascertain some information as to whether the pain is relieved by position; whether it is more persistent at night; whether it becomes necessary for the patient to get up and move about at night in order to be relieved of the pain.

In the physical examination, the patient is examined without clothing. The first part of the examination is inspection of the front of the patient as he stands, of the side of the patient and of the posterior portion of the body and extremities as he stands. In this way one notes the general aspect of the trunk and of the muscular groups. He notes whether there are distortions or deformities. He notes the general contour of the lumbar spine—whether it is flat or whether the lumbar curve is more pronounced; whether the back appears short in this region, and whether there are evidences in the lumbar spine or in the adjoining dorsal spine of angulation. When such data are secured by careful inspection, combined with the other methods of physical examination, important information is secured. For example, the lumbar spine appears short, with a saddle-back appearance. In the angle between the lumbar spine and the buttocks the finger may be in-

troduced into a very marked depression. Altogether, the trunk appears to be short when compared to the length of the legs. In addition to that, there are cutaneous folds, rather pronounced, just above the buttocks, and the lower portion of the abdomen is very prominent. As the author remarks, there is a falling of the abdomen upon the thighs, and he winds it all up by saying, "And you have there before your eyes the trunk of the patient who has a spondylolisthesis." (Et vous avez la, sous vos yeux, le tronc du spondylolisthesique.)

In connection with a lumbar segment that is short, flat, movable in all directions, there is a suggestion of sacralisation. In chronic arthritis of the lumbo-sacral region, the lumbar spine may be short and flat, but the movements are distinctly limited.

The author calls attention to a sign of considerable importance in connection with spina-bifida-occulta, but it is very often overlooked—that is, a tuft of hair in the lumbar region.

Attention is directed to the various other procedures in connection with the physical examination, such as the movement of the vertebral column, the hip, and of the lumbo-sacral region in particular. In order to make a differentiation between ordinary sciatica, the sign of Lasegue is employed. (In the employment of the sign of Lasegue, there is no pain on flexion of the thigh upon the abdomen, provided the leg is flexed at the knee, in the presence of ordinary sciatica not associated with pathology of the bones or joints.)

An X-ray examination of the spine is usually important. The author indicates that there ought to be an anteroposterior view, an oblique view, and a side-to-side view.

The anteroposterior view will show the number of vertebrae, their form, their architecture, their histological structure. It will show, also, the changes that may have taken place in connection with the inter-vertebral spaces to a certain extent. It will show spina-bifida-occulta, the general orientation of the pelvis, the position of the sacrum, and such abnormalities as sacralisation of the fifth lumbar vertebra.

A side-to-side X-ray negative is important because in that way one is able to determine many conditions, such as angulation, differences in the thickness of the inter-vertebral cartilages, structure of the cartilage with the extrusion of the nucleous pulposus, the difference in the density and the regularity of the bodies of the vertebrae, etc. Again, a good side-to-side X-ray negative will give distinct evidences of such abnormalities as spondylolisthesis.

Finally the author says, "When one suspects a diminution of the calibre of the medullary canal by a herniated nucleus pulposus or by any other mechanical object, one is justified in making an inspection of the canal after the injection of some opaque material, like lipiodol, the progress of which is followed by a fluoroscopic examination. One may thus determine the site and the degree of obstruction of the medullary cavity."

The following is the conclusion of the author: "Painful lumbo-sacral syndrome is more frequent than is usually believed. This frequency is accounted for, in part, by a complete examination, both clinical and radiologic. An observation well made, in proper order, serves to differentiate pains that are due to visceral origin, such as calculosis, tuberculosis of the kidney, uterine affections, etc., from pains that are distinctly due to pathology of the bones or joints. Finally, an examination fairly establishes, once for all, that so-called idiopathic sciatica and lumbago are nearly always associated with pathology of the bones or joints, and that they very often require surgical treatment."

—LeRoy Long

Pulmonary Tuberculosis With Hyperthyroidism (Tuberculose Pulmonaire Avec Hyperthyroidie): J. A. Vidal, F.R.C.P., Chef de service a l'hopital du Sacre-Coeur, and Real Dore, Chirurgien a l'Hopital General de Verdun; Montreal L'Union Medicale du Canada, March, 1939, Vol. 68, No. 3, page 262.

Directing attention to the clinical observation that sometimes the differential diagnosis between a mild hyperthyroidism and incipient tuberculosis is not always made with facility, because of the presence of symptoms and signs, such as loss of weight, weakness, rapid pulse, etc. that might be found with either of these diseases singly, the authors report the case of a patient that is characteristically a good clinical picture when both pulmonary tuberculosis and hyperthyroidism exist at the same time.

A married woman, 39 years of age, came to hospital because she had cough, a small hemoptysis a few days before, fever in the afternoon, and with a history of having lost 40 pounds during the preceding two years, her actual weight at the time of admission being 97 pounds. There was increase in the rapidity of the pulse, with a relatively low blood pressure.

X-ray examination of the chest showed some density of the superior lobe on the right side, while on the left side there was a web-like opacity extending from the hilus to the costo-clavicular angle on each side.

The patient was given management, chiefly of a hygienic and dietetic character, from January 14, 1937, to May 12, 1937. During this time the radiographic findings had improved a good deal, and the weight had gone up to 111½ pounds. The appetite was better, but pulse remained rapid, being from 115 to 125 per minute. When she entered hospital, tubercle bacilli were found in the sputum, and they were still present in the sputum after the management indicated above.

About this time there was some family disturbance, the patient became excessively nervous, lost appetite for food, and found it difficult to sleep. At the same time there was some tremor of the hands and fingers, and a rapid pulse rate that was increased on exertion. There was progressive loss of weight. In connection with these symptoms and signs, enlargement of the thyroid gland was demonstrable, and there was some exophthalmus.

Repeated examinations showed that the pulmonary lesions were apparently stationary, but evidences of hyperthyroidism increased rapidly. The basal metabolism was plus 45. The pulse from 120 to 130, the patient lost weight, and there was nervousness and insomnia. It appeared to be pretty clear that there was a coexistence of pulmonary tuberculosis and a rather pronounced hyperthyroidism. Repeated examinations showed that the B.M.R. varied from plus 33 to plus 69.

Reasoning that a continuation of the hyperthyroidism would greatly interfere with the proper and successful management of the pulmonary tuberculosis, it was decided to do a thyroidectomy in two stages. The first operation was on August 24, 1937, the second September 17, 1937.

In support of the decision to perform a thyroidectomy in the presence of a stationary tuberculosis, reports by Lahey, of Boston, and Crile, of Cleveland, are quoted.

The operations were done under local anesthesia, combined with general superficial anesthesia produced by nitrogen oxide gas in whiffs (anesthesie generale superficielle au protoxyde d'azote, par bouffees).

The histological examination disclosed an interlobular hyperplasia, with masses of lymphoid cells. In addition, there was at one point a tuberculous granuloma.

The patient was discharged September 30, 1937. At that time the weight was 102 pounds, the pulse varied from 94 to 100, the temperature was sometimes irregular, and there was still cough and raising of material.

The management for pulmonary tuberculosis was continued. By the middle of December, 1937, the weight was 126 pounds, pulse 88 to 92. The expectoration was greatly reduced. At the end of January, 1938, there was an absence of suspicious expectoration, the weight 132 pounds, the pulse 84 to 88.

On March 29, 1938, radiographic examination showed that there was much improvement in connection with lung shadows. The weight was 136 pounds, pulse 84 to 90. The patient was seen again in the latter part of May, 1938, at which time she was feeling well.

In conclusion, the authors indicate that when there is an active hyperthyroidism which interferes with the management of a pulmonary tuberculosis there ought to be a thyroidectomy.

—LeRoy Long.

The Diffuse Colloid Goiter: C. A. Hellwig, M.D., F.A.C.S.; Surgery, Gynecology and Obstetrics; March, 1937, Vol. 64, No. 3, page 604.

McCarrison, one of the great authorities on goiter, has stated that there is little precise knowledge as to the geographic distribution, epidemiology, etiology, and biochemistry of the diffuse colloid goiter.

The study of this type of endemic goiter has been neglected. Few clinicians realize that in North America, about 90 per cent of the surgical goiters develop in this structure.

In regard to the function of the diffuse colloid goiter, most writers (Rienhoff, Plummer, Boothby) contend that it is hypo-active. Hellwig believes that adolescent goiter in this country is not associated with a low thyroid function. He points out that, although basal metabolic tests are valuable in adults, they are very unreliable in young individuals between the ages of 14 and 19 years. The author states that he has never seen a case of myxedema with diffuse colloid goiter.

He believes that diffuse colloid goiter during adolescence satisfies the increased demand of the organism for thyroid hormone. He also believes that in another period of physiological hypertrophy of the thyroid (pregnancy) diffuse colloid goiter often develops. It is again his opinion that this is a successful attempt of the thyroid to produce more secretion.

If the diffuse colloid goiter persists or develops after the twenty-fifth year, without pregnancy, then definite symptoms of hyperthyroidism are evident in the majority of cases (81 per cent).

He believes that there is a close histological relationship between the diffuse colloid goiter and exophthalmic goiter. He believes that these two conditions are related stages of thyroid activity and that one can change into the other.

He draws the conclusion that cretinism will never become a serious problem in our country as long as colloid goiter is the predominating type of endemic goiter.

If his conception is correct that the diffuse colloid goiter forms the anatomical basis for the development of exophthalmic goiter, it is reasonable to expect that a successful prevention of colloid goiter will lead ultimately to the disappearance of Grave's disease.

His conclusions in this article are set down as follows:

"1. The diffuse colloid goiter is the prevailing type of endemic goiter in level countries. In North America, about 90 per cent of the surgical goiters develop in this structure.

"2. The diffuse colloid goiter is not preceded, as a rule, by the parenchymatous, colloid-poor type of goiter, but it develops directly from the normal gland.

"3. During puberty and pregnancy, a small diffuse colloid goiter is physiological. It satisfies the increased demand of the organism for thyroxin during these periods.

"4. If the diffuse colloid goiter persists or develops after the twenty-fifth year of life and there is no pregnancy, symptoms of hyperthyroidism are very common.

"5. There is a close anatomical relationship between diffuse colloid goiter and exophthalmic goiter. This explains the fact that toxic goiter is much more common in level regions where colloid goiter is the prototype of endemic goiter.

"6. In white rats, diffuse colloid goiter can be produced by a diet containing a positive goitrogenic factor and a relatively large amount of iodine."

—LeRoy D. Long.

EYE, EAR, NOSE AND THROAT

Edited by Marvin D. Henley, M.D.
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The History of Cancer of the Larynx. Sir StClair Thomson, London. The Journal of Laryngology and Otology, February, 1939.

This is an extremely interesting article about 25 to 30 pages in length. The rapid increase in the death rate of cancer is compared with the steady, though slower, diminution of tuberculosis. Tubercular death rate has decreased 30.01 per cent in 12 years; cancer death rate has increased 27.75 per cent. Cancer of the larynx is, relatively to its occurrence in other regions, a rare manifestation. In every 100 cases of cancer only 1.8 are in the larynx. Investigation of the past 20 years shows cancer of the larynx to be on the increase more, relatively speaking, than elsewhere in the body.

Since 1855 it has been possible to observe more accurately cancer of the larynx. Literature shows reference to this disease as far back as 100 A.D. by Aretaeus and 200 A.D. by Galen. Garcia demonstrated auto-laryngoscopy in 1854 but the frequency of the disease was not well recognized before 1883, when Butlin spoke of intrinsic and extrinsic cancer and stated that the vocal cords were the most common site of the lesion.

The diagnosis of cancer of the larynx has made its most rapid strides in the last 20 years. Excluding tuberculosis and syphilis, in a patient at or over middle age (particularly a man), a limited neoplasm, located within the larynx and especially on the vocal cord, should be regarded as possibly malignant, a diagnosis on clinical appearances proved correct in 61 of 63 cases. Recent advance in pathology indicate a biopsy when a proper specimen can be obtained for examination. "Intrinsic cancer, from the view point of early diagnosis, offers the great advantage of causing the symptom of persistent hoarseness. In the extrinsic form this warning signal is lacking."

Intrinsic cancer, on a vocal cord, diagnosed and operated early gives a favorable prognosis (80 per cent). Extrinsic cancer is seldom arrested or cured by operation. It is hard to diagnose early. Aetiology is unknown. Predisposing factors mentioned are heredity, chronic irritation, excessive use of the voice, abuse of alcohol and tobacco and syphilis. Sex is an important factor. Intrinsic cancer is nine to ten times more frequent in males

than in females. The most common age for its occurrence is between the ages of 50 and 60.

Broders' four group classification pathologically suits the authors' views best.

Signs, symptoms and site are correlated as follows: 1. Intrinsic cancer is met with most frequently on the vocal cord. 2. The subglottic area is the next most frequent site. 3. It is rare in the ventricular band or in the sinus of Morgagni, almost unknown in the inter-arytenoid region. 4. Rarely originates in the posterior third of the cord or processus vocalis. 5. The central or anterior half of the cord is the favorite location. 6. The two extremities in the usual chordal cancer are generally quite free in early cases.

As early as 1886 it was noted that in many cases of intrinsic cancer, the movement of the affected cord was impaired or abolished. It was thought that this was an early symptom; it is now recognized as a symptom of advanced growth and depending on the degree of mobility aids greatly in the prognosis and method of treatment. Treatment is discussed in detail, relating failures as well as successes, after treatment and end results. It is discussed under the following headings: a. Removal by the laryngofissure route. b. Removal by laryngectomy. c. Removal by the lateral pharyngotomy route. d. The removal of glands. e. Treatment by radium and X-ray.

I will close with a paragraph from the author's conclusions:

"When we recall that 50 years ago Morell Mackenzie was obliged to say that, for cancer of the larynx, 'the only possible termination is death,' we may rejoice in realizing today that with laryngofissure we can effect lasting cures in over 80 per cent of cases, that there should be no operative mortality, that surgery (laryngofissure and laryngectomy) will cure practically all cases of intrinsic cancer and that, in skilled and careful hands, they are now well established as safe and justifiable procedures."

The Significance of Errors of Refraction in Chronic Blepharitis of Children. E. J. Somerset, London. The British Journal of Ophthalmology, March, 1939.

The purpose of the paper is to enquire into the significance of refractive errors as an aetiological factor in children suffering from chronic blepharitis or blepharo-conjunctivitis.

Ernest Clarke in 1894 examined 100 cases whose average age was 17 years, including 44 school children. Atropine was used as was with the author's cases in this present report. Clark found hypermetropia in 64, hypermetropic astigmatism in 96, mixed astigmatism in eight, myopia in five, myopic astigmatism in 26, and emmetropia in one. From his observations he concluded that asthenopia due to ametropia was invariably present and although there was an underlying tendency to eczema or struma, the important factor in treatment was the ordering of glasses to correct the ametropia which he defined as follows: Astigmatism of more than 0.25 D., myopia and hypermetropia of more than 1. D. The opinion today is that the new-born baby is almost a plus 4.0 D. (atropine); as the child grows older the hypermetropia diminishes until between the ages of four and eight years the most common findings are plus 1.50 to plus 3.50 D. (atropine). Maximum incidence plus 2.50 D.

The author's investigations showed:

1. There is no significant difference in the spherical refractive error in children suffering from blepharitis in comparison with the normal child.

2. The incidence of astigmatism is similar in blepharitis cases and normal children.

3. Uniocular cases do not show blepharitis more frequently in the eye with the greater ametropia.

4. Causes other than errors of refraction must be sought for in blepharitis of children.

The Diabetic Fundus. K. von Hofe, Koln, Germany. Digested from Graefe's Archiv. Ophth. (Germany), December, 1938. Published in Digest of Ophthalmology and Otolaryngology, March, 1939.

By examining the eyegrounds of 322 diabetics in the space of a few months, the author was able to formulate a defenite opinion as to what constitutes the usual and what constitutes the exceptional diabetic fundus.

Retinitis in the strict sense of the word, i.e., white spots and hemorrhages in the retina, was found in 28 cases; 19 cases showed only punctate hemorrhages; and 16 cases showed choroidal changes.

There is nothing distinguishing or characteristic in the appearance of the retinitis as it was found in diabetics. The white spots represent the reaction of the retina to the disturbed nutrition caused on the one hand by a diseased vascular system and on the other hand by the faulty metabolism. They are by no means characteristic of diabetes. They are found in a multitude of retinal conditions where the metabolism of the retina is disturbed, especially where there are vascular changes.

Punctate hemorrhages were found to be the most characteristic lesions of the diabetic fundus. These lesions may lie in the superficial or in the deep layers of the retina, and are usually found in the neighborhood of the disc.

The third group shows an affection of the deeper layers of the retina and of the choroid. Yellowish spots that are sharply bounded are seen and only exceptionally are they accompanied by punctate hemorrhages. This type is not often seen except in diabetics.

Although most of the cases had a hypertension, there were enough exceptions to indicate that there were other factors more important in the causation of diabetic retinal pathology.

Some claim that vascular changes are of no importance in the diabetic fundus. Braun even goes so far as to state that the very lack of visible vascular changes is indeed characteristic. Of 47 cases 15 had no definite visible changes of the blood vessels. In the others it was not possible to decide whether the changes were caused by or merely coincidental with the diabetes. However the punctate hemorrhages can be nothing else but an expression of damaged blood vessels, and their very frequency makes vascular pathology an essential feature of the diabetic fundus.

The Retina in Septic and Chronic Endophthalmitis of Ectogenous Origin. Harvey D. Lamb, M.D., St. Louis. The American Journal of Ophthalmology, March, 1939.

E. Fuchs' definition of the term is "the ocular condition characterized by the exudation of pus cells into the vitreous from the ciliary body and retina following the deposit of toxins in the vitreous."

A table accompanies the report which tells the kind of injury or operation, interval between penetration and enucleation, anterior retina quantity of pus cells, posterior retina quantity of pus cells, anterior retina quantity of macrophages, posterior retina quantity of macrophages, anterior retina quantity of round cells, posterior retina quantity of round cells, degree of perivasculitis, presence of connective tissue on inner surface of

retina. Microphotographs also accompany the report.

The author's own summary is as follows:

The principal retinal changes are tabulated in the case of 28 eyes with septic endophthalmitis and of seven eyes with chronic endophthalmitis. The 28 eyes with so-called complicated septic endophthalmitis were characterized by at least a small amount of small round-cell infiltration in the ciliary body and choroid together with the exudate of numerous pus cells and macrophages into mainly the anterior or the cyclitic portion of the vitreous. The term chronic endophthalmitis is introduced as a corollary to septic endophthalmitis for the clinical and pathologic diagnosis of eyes showing an exudate into the vitreous that is composed almost altogether of macrophages. The retinal change occurring first in endophthalmitis was perivasculitis. The latter was the source of all the inflammatory round cells that infiltrated the retina and migrated into the vitreous from the retina. In all the eyes tabulated, the macrophage was the predominant cell composing the perivasculitis. Perivasculitis in some degree was present in all but two of the 28 eyes with septic endophthalmitis and in all but two of the seven eyes with chronic endophthalmitis. The number of round cells infiltrating the retina entering the vitreous were generally fewer by far in chronic endophthalmitis than in complicated septic endophthalmitis. The retinal membrane on the inner surface of the retina like the cyclitic membrane was composed of connective tissue produced by fibroblasts that developed from the macrophages in the vitreous. This retinal membrane is more likely to occur in septic endophthalmitis than in chronic endophthalmitis because more macrophages develop in the former.

INTERNAL MEDICINE

Edited by Hugh Jeter, M.D., 1200 North Walker, Oklahoma City

Malignant Cells in Serous Effusions. John R. McDonald, M.D. and Albert C. Broders, M.D., Rochester, Minn. Archives of Pathology, January, 1939, Volume 27.

In this the authors review the reports on the subject dealing with cases in which malignant cells were demonstrated in effusions and discuss the criteria for diagnosis of malignant cells in serous effusions. In addition the authors present their results in microscopic examinations in which malignant cells were found and those in which malignant cells were not found.

The authors in a review of 30 cases in which malignant cells were found in the fluids were able to confirm the diagnosis in 12 cases by necropsy or biopsy and in the remaining 18 cases the clinical roentgenographical evidence was suggestive of malignancy in 12. In the six remaining cases there was no evidence that the diagnosis of malignancy was wrong, although definite proof was lacking. In an analysis of 41 cases in which malignant cells were not found in the effusion they found that 10 had carcinoma (proven by necropsy or biopsy), 17 had effusions due to lesions other than malignancies (tuberculosis, cirrhosis or inflammatory conditions), and in 11 cases it was impossible to arrive at a diagnosis.

The technique which was used in the examination of these specimens is presented and several excellent photomicrographs are shown.

The authors conclude that the examination of the sediment obtained from effusions is of definite value in cases in which malignant growths involving serous cavities are suspected and when malignant cells can be identified definitely in serous effusions, the diagnosis of malignant growth carries a high degree of accuracy.

Comment: In a critical analysis of the diagnoses based on the microscopic examination of 69 peritoneal and pleural fluids at the University Hospital the following results were obtained:

In 24 fluids (representing 23 patients) malignant cells were demonstrable. In 45 fluids (representing 31 patients) no tumor cells were demonstrable. In the 23 cases in which malignant cells were demonstrable the diagnosis was proven in 13 cases by necropsy or biopsy and in the 31 cases in which tumor cells were not demonstrable the diagnosis was proven in 18 cases. From this analysis the following conclusions were drawn:

1. When a diagnosis of malignancy is made from the cytological study of serous effusions, the diagnosis is accurate in approximately 75 to 85 per cent of the cases.

2. When tumor cells are not demonstrable, the diagnosis is accurate in but approximately 40 to 50 per cent of the cases.

3. A diagnosis of malignancy derived from the cytological examination of fluid from the pleural and peritoneal cavities carries a high degree of accuracy and warrants a routine examination for malignant cells.

PLASTIC SURGERY

Edited by
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The Fate of Living and Dead Cartilage Transplanted in Humans. Lindon A. Peer, M.D., F.A.C.S., Newark, N. J. S.G.&O., March, 1939, Vol. 68, Number 3.

The author has done original work to determine the fate of living and dead cartilage transplants in human beings. The following is an outline of the experiments:

"1. Six segments of cadaver cartilage preserved in alcohol were transplanted beneath the skin of six other humans (homografts) and removed for examination at intervals from six months to two years.

"2. Eight segments of living autogenous costal cartilage were buried beneath the skin of eight humans and removed for examination at intervals from six months to six years. All of these grafts were transplanted without perichondrium.

"Cadaver cartilage grafts. The use of cartilage preserved in alcohol to fill depressions of the nose, face and skull, like most surgical procedures, is not new. It was utilized rather extensively a generation ago and was discarded because of the belief that the grafts either suppurated or were absorbed and replaced by fibrous tissue. Recently there has been a revival of the method. Pierce and O'Conner, J. B. Brown, Claire Straith, C. R. Straatma, and I, among others have used cartilage preserved in alcohol to repair saddle nose and defects of the skull. Successful grafts examined by external palpation appear to retain their size and consistency to periods of over a year.

The advantage of this procedure is obvious, as fresh cartilage from cadavers is easily obtainable in almost any desired quantity, and a supply of this cartilage preserved in alcohol may be kept on hand in the hospital laboratory for use when needed. It goes without saying that the donor must be proved free from syphilis. The disadvantage of the method lies in the uncertainty as to the ultimate fate of the transplant.

Autogenous rib cartilage grafts. Koenig, in 1896, was the first to use the cartilage transplants in man, and since that time, living autogenous rib cartilage has been employed widely as a filling substance, and for the structural support of soft tissues. There is, however, a great difference of opinion concerning the fate of the autogenous cartilage graft following transplantation. A questionaire sent to 10 surgeons who frequently use the rib cartilage grafts, disclosed a variety of beliefs concerning the fate of the grafts. These opinions were based on clinical evidence and may be summarized as follows: 1. Cartilage tends to survive when transplanted. 2. Cartilage tends to degenerate when transplanted. 3. Cartilage survives when transplanted with its perichondrium. but tends to degenerate and disappear when transplanted without its perichondrium.

The author gives a comprehensive outline of the following experiments: Previous experimental work with living cartilage in animals. Previous experimental work with living cartilage in humans. Previous experimental work with the transplantation of dead cartilage in animals. Previous experimental work with the transplantation of dead cartilage in humans.

A detailed description of cadaver cartilage transplants after having buried and observed from six months to 24 months is told in a very enlightening manner.

Summary of findings in pickled cartilage grafts. The grafts remain, after transplantation as tolerated dead foreign bodies for about 9½ months. From this time on the surrounding host tissues invade the foreign cartilage, and very slowly absorb portions of the cartilage. This process, however, is very gradual and the bulk of the graft is still present two years after transplantation. The 14 month and two year specimens showed areas of calcification or early bone formation.

Description of living autogenous rib cartilage transplants: The five sections buried from six months to two years all appear as normal living cartilages. They are surrounded by a dense connective tissue capsule and there is no evidence of invasion or absorption of the cartilage by the surrounding host tissue.

The author gives magnified photographic illustrations of cartilagenous growth of cells of various stages and an interesting discussion of each.

Summary of findings in autogenous rib cartilage grafts:

The cartilage grafts buried from six months to two years showed no evidence of invasion by fibrous tissue or absorption. The graft buried 4½ years appeared in the form of a cylinder of living cartilage, with this bone formation at the core of the graft represents a degeneration of cartilage which failed to survive transplantation because of nutritional difficulties.

The segment buried six years appeared as normal living cartilage. The host connective tissue on one side of the graft slightly penetrated the edge of the cartilage and this may represent beginning invasion. The cartilage graft, however, was scraped with a scalpel before insertion in the nose, and I believe that the surrounding host tissue merely occupies the small depressions formed in the cartilage by the scraping.

Conclusions: The dead cartilage grafts buried from 9½ months to two years showed progressive invasion by fibrous tissue and partial absorption. In contrast to these findings autogenous rib cartilage grafts showed no invasion or absorption over the same period of time.

Two late autogenous rib cartilage grafts buried 4½ years and six years appeared as living cartilage.

From the evidence found in these sections one may conclude that autogenous rib cartilage survives after transplantation as living cartilage and, up to periods as long as six years, neither increases nor decreases in size.

Autogenous rib cartilage is better material for plastic repair than dead, pickled cartilage.

Comment: I have had satisfactory results with autogenous cartilage especially in reconstruction of the bony framework of the nose. I have not used the pickled cartilage because the ones that I had seen employed in this community in my judgement were not successful. Some of them showed softening and infection early.

I have not had the opportunity to examine by microscopic method any of the grafts that I have used. It is quite possible that the pickled cartilage in the hands of some men is quite satisfactory.

The author in this article has demonstrated what actually happens to both types of grafts, that is, living and dead grafts.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M.D., F.A.C.S.
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"The Scalenus Anterior Muscle in Relation to Shoulder and Arm Pain," Joseph A. Freiberg, Jr. Bone & Joint Surg., Vol. XX, No. 4, October, 1938.

The author first reviews briefly the history of pain in nervous and vascular disturbances of the shoulder, citing first that J. B. Murphy in 1906 described the relation between the scalenus anterior muscle, but it was not until 1927 that definite relationship between the cervical ribs and the scalenus anterior muscle was really demonstrated. At this time it was pointed out by Adson and Coffey that division of the scalenus anterior muscle would relieve pain suspected due to cervical ribs.

The author briefly reviews the literature on the subject and then describes in some detail the anatomical position of the muscle, particularly in relation to the subclavian artery and the brachial plexus, in which there is rather extensive communication with the third, fourth, fifth, sixth, seventh and eighth cervical nerves. This spasm of the muscle or spasm associated with hypertrophy or contracture of the muscle may produce injury or lesions to the roots of the nerves themselves and be manifest as a simple nerve irritation with cutaneous or muscle pain in the areas supplied by the involved roots. There may be actual muscle weakness or paralysis. Vascular symptoms of coldness, swelling and patchy areas of subjective numbness may occur. The most common complaint is that of a dull ache in the hand and forearm, associated with a feeling of continual pressure as if someone were squeezing the extremity from without. It is easily seen that any lesion, traumatic or infectious, in which the cervical spine or the shoulder girdle is involved may be an initiating factor in causing the scalenus anterior syndrome. Even lesions of the shoulder girdle, such as a fractured clavicle or a painful shoulder associated with calcification of the supraspinatus tendon may initiate diffuse muscle spasm which accompanies the lesion.

The author describes 20 cases of scalenus anterior syndrome, associated with various lesions of the shoulder girdle and of the cervical spine. Six were associated with lesions of the supraspinatus or of the short rotator tendons of the shoulder; four, with arthritis of the shoulder, one case being bilateral; three, with the anatomical type initiated by strenuous exercise or a lesser trauma; three, with fracture of the clavicle; one,

with an old traumatic arthritis of the cervical spine; one, with an infectious arthritis of the cervical spine; one, with an old unreduced dislocation of the shoulder; and one, with a traumatic subluxation of the third cervical vertebra on the fourth.

Therapy in these lesions has been directed first to the primary lesion and second to the syndrome. Frequently the annoying and distracting signs of the syndrome have disappeared with efficient management of the primary lesion. Traction in the line of deformity has been one method of therapy which relieved pain by overcoming the spasm of scalenus anterior.

The author feels that if time is of no importance traction is the method of choice. Tenotomy may always be resorted to if conservative therapy is unsuccessful.

The author feels that in the presence of a syndrome of three months' duration with definite muscle weakness and signs of vascular interference, scaleniotomy should probably be done. However, a trial of conservative treatment should be made first.

Note by abstractor: The scalenus anterior syndrome is not a rare condition, but one that is seen more frequently than was formerly supposed. Diagnostic points include vague, indiscriminate pain, numbness in the hand, forearm and shoulder, vascular disturbances and mild disturbances of sensation or some evidence of muscular weakness and atrophy. Once diagnosed the condition lends itself well to treatment following the methods suggested by Dr. Freiberg. After tried conservative therapy in the form of traction of the long axis of the arm, if no relief, a tenotomy of the scalenus anterior muscle should be undertaken. It is obvious that this is no simple procedure from the standpoint of the surgeon, although it is not dangerous to the patient if he is in the hands of one who knows anatomy of the cervical region. The post-operative course is usually uneventful. Pain is usually relieved immediately post-operatively.

UROLOGY

Edited by D. W. Branham, M.D.
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Precocious Hypertrophy of Prostate Following Persistent Treatment With Gonadotropic Hormone. Tracy O. Powell. Journal of Urology, February, 1939.

Experimentally the gonadotropic hormone stimulates the secondary sex organ when the gonads are intact. Prostatic hypertrophy may be easily produced by injecting suitable quantities of any type of gonadotropic hormone in the experimental animal such as the rat. In view of this information it is surprising that more reports of stimulation of the secondary sex organ such as the penis and prostate are not reported during the course of hormonal treatment of undescended testes.

Because no similar case has been reported the authors considered it of sufficient interest to report an instance of prostatic hypertrophy from hormonal treatment. The case reported was that of a 17-year-old boy who had been given hormonal therapy over a period of time and subsequently developed an enlargement of the prostate not unlike that seen in senile individuals. This enlargement was of sufficient size to produce obstructive symptoms so far as micturition was concerned. The treatment given was in addition to local measures the administration of a preparation of bull testes "contruin." On this treatment the patient's condition returned to an almost normal state with relief from the obstruction. The author warns that such a complication is possible and this should be remembered during the course of such hormonal treatment.

A New Operation For the Relief of Incontinence of Urine and Feces: Preliminary Report. Oswald S. Lowsley and Robert W. Hunt. The Journal of Urology. February, 1939.

The authors state that incontinence of urine and feces due to spina bifida or other causes is one of the cruelest developmental disorders of mankind. Any operation which may aid in relieving this distressing condition is most welcome. Accordingly he has discovered an operation by which through a single incision in the perineum using ribbon catgut he is able to plicate the bulbous portion of the urethra and the ventral portion of the rectum thereby narrowing the outlet of these structures.

Successful animal experimentation with this method induced him to try it on two young boys. The operation was performed with no difficulty and the end results were good. Both patients were able to control their urine and bowels when healing had taken place.

The Use of Testosterone Propionate in Prostatic Hypertrophy. Rex Bolend, B.S., M.D., Oklahoma City. Southern Medical Journal, February, 1939.

Twenty-three patients suffering from prostatic hypertrophy with urinary obstruction were given testosterone propionate in an attempt to evaluate its clinical effects on the disease. Seven of these cases were subjected to biopsies both before and after this course of treatment.

A total of 43.5 per cent of the patients in this series were dismissed from the hospital clinically well or symptom-free; 30.5 per cent were improved, and 26 per cent showed no improvement. Definite histological changes were noticed in the tissue removed from the gland, which undoubtedly resulted from the effects of the medication. These were: 1. Exaggeration of glandular hyperplasia. 2. A reduction in the inflammatory reaction. 3. A reduction or at least no increase in the stroma of the gland, however, no changes could be observed in the individual epithelial cells of the gland.

Comment: Apparently testosterone propionate does produce some beneficial effect at least on the symptomatology of this disease. Such a study as this adds something to our understanding of this most prevalent condition. Doubtless the improvement observed is due to a softening of the bladder neck, thereby allowing the vesical orifice to open more easily. The demonstration of a decrease in inflammatory reaction in the gland is significant as a considerable portion of the symptoms are often due to irritative factors which are produced by the complicating infection present. It seems to me that a profitable field of investigation would be a study to endeavor to find out if possibly testosterone propionate would be of value as an adjunct in the treatment of ordinary chronic prostatitis.

Warns Against Tying Off External Carotid Artery

Only the external carotid (the principal artery of the neck) should be tied off for otherwise uncontrollable profuse nasal hemorrhages, J. L. Fetterman, M.D., and W. H. Pritchard, M. D., Cleveland, warn in The Journal of the American Medical Association for April 8.

Their warning is based on a case in which not only the left external but also the left internal carotid artery was tied off. Following this ligation or tying off, convulsions, impairment of intelligence, defection in the understanding of the written or spoken word, numbness of the left side of the body, and one-sided paralysis resulted. Insufficient blood supply on the left side of the brain was the chief cause of these symptoms.

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Secretary-Treasurer-Editor, Dr. L. S. Willour, McAlester.

Executive Secretary, Mr. R. H. Graham, McAlester.

Speaker, House of Delegates, Dr. J. D. Osborn, Jr., Frederick.

Vice Speaker, House of Delegates, Dr. P. P. Nesbitt, Medical Arts Building, Tulsa.

Delegates to the A. M. A., Dr. W. Albert Cook, Medical Arts Building, Tulsa, 1938-39.

Meeting Place, Oklahoma City, May 1, 2, 3, 1939.

SPECIAL COMMITTEES 1938-39

Annual Meeting: Dr. H. K. Speed, Sayre; Dr. W. A. Howard, Chelsea; Dr. L. S. Willour, McAlester.

Conservation of Hearing: Dr. H. F. Vandever, Chairman, Enid; Dr. J. B. Hollis, Mangum; Dr. Chester McHenry, Oklahoma City.

Conservation of Vision: Dr. W. M. Gallaher, Chairman, Shawnee; Dr. Frank R. Vieregg, Clinton; Dr. Pauline Barker, Guthrie.

Crippled Children: Dr. Earl McBride, Chairman, Oklahoma City; Dr. Roy L. Fisher, Frederick; Dr. M. B. Glissmann, Okmulgee.

Industrial Service and Traumatic Surgery: Dr. Cyril C. Clymer, Medical Arts Bldg., Oklahoma City; Dr. J. Wm. Finch, Hobart; Dr. J. A. Rutledge, Ada.

Maternity and Infancy: Dr. George R. Osborn, Chairman, Tulsa; Dr. P. J. DeVanney, Sayre; Dr. Leila E. Andrews, Oklahoma City.

Necrology: Dr. G. H. Stagner, Chairman, Erick; Dr. James L. Shuler, Durant; Dr. S. D. Neely, Muskogee.

Post Graduate Medical Teaching: Dr. Henry H. Turner, Chairman, Oklahoma City; Dr. H. C. Weber, Bartlesville; Dr. Ned R. Smith, Tulsa.

Study and Control of Cancer: Dr. Wendell Long, Chairman, Oklahoma City; Dr. Paul B. Champlin, Enid; Dr. Ralph McGill, Tulsa.

Study and Control of Tuberculosis: Dr. Carl Puckett, Chairman, Oklahoma City; Dr. W. C. Tisdal, Clinton; Dr. F. P. Baker, Talihina.

Study and Control of Venereal Disease: Dr. Robert H. Akin, Chairman, Medical Arts Bldg., Oklahoma City; Dr. Shade D. Neely, Muskogee; Dr. D. V. Hudson, Medical Arts Bldg., Tulsa.

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Dr. C. J. Fishman ..... Oklahoma City
Dr. W. S. Larrabee ..... Tulsa
Dr. J. M. Watson ..... Enid
Dr. T. H. McCarley ..... McAlester

STANDING COMMITTEES 1938-39

Medical Defense: Dr. O. E. Templin, Chairman, Alva; Dr. L. C. Kuyrkendall, McAlester; Dr. E. Albert Aisenstadt, Picher.

Medical Economics: Dr. C. B. Sullivan, Cordell, Chairman; Dr. J. L. Patterson, Duncan; Dr. W. M. Browning, Waurika.

Medical Education and Hospital: Dr. V. C. Tisdal, Chairman, Elk City; Dr. Robert U. Patterson, Oklahoma City; Dr. H. M. McClure, Chickasha.

Public Policy and Legislation: Dr. Finis W. Ewing, Surety Bldg., Chairman, Muskogee; Dr. Tom Lowry, 1200 North Walker, Oklahoma City; Dr. O. C. Newman, Shattuck; Dr. R. O. Early, Medical Arts Bldg., Oklahoma City.
(The above committee co-ordinated by the following, selected from each councilor district.)

District No. 1.—Arthur E. Hale, Alva.
District No. 2.—McLain Rogers, Clinton.
District No. 3.—Thomas McElroy, Ponca City.
District No. 4.—L. H. Ritzhaupt, Guthrie.
District No. 5.—P. V. Annadown, Sulphur.
District No. 6.—R. M. Shepard, Tulsa.
District No. 7.—Sam A. McKeel, Ada.
District No. 8.—J. A. Morrow, Sallisaw.
District No. 9.—W. A. Tolleson, Eufaula.
District No. 10.—J. L. Holland, Madill.

Scientific Exhibits: Dr. R. Rankin Denny, Chairman, Tulsa; Dr. Robert H. Akin, Oklahoma City; Dr. R. C. Pigford, Tulsa.

Scientific Work: Dr. W. G. Husband, Chairman, Hollis; Dr. J. S. Rollins, Prague; Dr. J. L. Day, Supply.

Hospital Insurance Board—Dr. H. D. Collins, Oklahoma City; Dr. W. P. Neilson, Enid; Dr. R. L. Fisher, Frederick.

Public Health:

Chairman—Dr. G. S. Baxter, Shawnee.
District No. 1.—C. W. Tedrowe, Woodward.
District No. 2.—E. W. Mabry, Altus.
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District No. 6.—C. E. Bradley, Tulsa.
District No. 7.—G. S. Baxter, Shawnee.
District No. 8.—M. M. De Arman, Miami.
District No. 9.—T. H. McCarley, McAlester.
District No. 10.—J. B. Clark, Coalgate.

SCIENTIFIC SECTIONS

General Surgery: Dr. F. L. Flack, Chairman, Nat'l Bank of Tulsa Bldg., Tulsa; Dr. John E. McDonald, Vice-Chairman, Medical Arts Bldg., Tulsa; Dr. John F. Burton, Secretary, Osler Building, Oklahoma City.

General Medicine: Dr. Frank Nelson, Chairman, 603 Medical Arts Bldg., Tulsa; Dr. E. R. Musick, Vice-Chairman, Medical Arts Bldg., Oklahoma City; Dr. Milam McKinney, Medical Arts Bldg., Oklahoma City.

Eye, Ear, Nose & Throat: Dr. B. H. Coachman, Chairman, Manhattan Bldg., Muskogee; Dr. F. M. Cooper, Vice-President, Medical Arts Bldg., Oklahoma City; Dr. James R. Reed, Secretary, Medical Arts Bldg., Oklahoma City.

Obstetrics and Pediatrics: Dr. C. W. Arrendell, Chairman, Ponca City; Dr. Carl F. Simpson, Vice-Chairman, Medical Arts Bldg., Tulsa; Dr. Ben H. Nicholson, Secretary, 300 West Tweifth Street, Oklahoma City.

Genito-Urinary Diseases and Syphilology: Dr. Elijah Sullivan, Chairman, Medical Arts Bldg., Oklahoma City; Dr. Henry Browne, Vice-Chairman, Medical Arts Bldg., Tulsa; Dr. Robert Akin, Secretary, 400 West Tenth, Oklahoma City.

Dermatology and Radiology: Dr. W. A. Showman, Chairman, Medical Arts Bldg., Tulsa; Dr. E. D. Greenberger, Vice-Chairman, McAlester; Dr. Hervey A. Foerster, Secretary, Medical Arts Bldg., Oklahoma City.

STATE BOARD OF MEDICAL EXAMINERS

Dr. Sam A. McKeel, Ada, President; Dr. C. E. Bradley, Tulsa, Vice-President; Dr. J. D. Osborn, Jr., Frederick, Secretary; Dr. O. C. Newman, Shattuck; Dr. L. E. Emanuel, Chickasha; Dr. S. D. Leslie, Okmulgee; Dr. G. H. Stagner, Erick.

STATE COMMISSIONER OF HEALTH

Dr. Grady F. Mathews, Oklahoma City.

COUNCILORS AND THEIR COUNTIES

District No. 1: Texas, Beaver, Cimarron, Harper, Ellis, Woods, Woodward, Alfalfa, Major, Dewey—Dr. O. E. Templin, Alva. (Term expires 1940.)

District No. 2: Roger Mills, Beckham, Greer, Harmon, Washita, Kiowa, Custer, Jackson, Tillman—Dr. V. C. Tisdal, Elk City. (Term expires 1939.)

District No. 3: Grant, Kay, Garfield, Noble, Payne, Pawnee—Dr. A. S. Risser, Blackwell. (Term expires 1941.)

District No. 4: Blaine, Kingfisher, Canadian, Logan, Oklahoma, Cleveland—Dr. Philip M. McNeill, Oklahoma City. (Term expires 1941.)

District No. 5: Caddo, Comanche, Cotton, Grady, Love, Stephens, Jefferson, Carter, Murray—Dr. Walter Hardy, Ardmore. (Term expires 1941.)

District No. 6: Osage, Creek, Washington, Nowata, Rogers, Tulsa—Dr. James Stevenson, Medical Arts Bldg., Tulsa. (Term expires, 1941.)

District No. 7: Lincoln, Pontotoc, Pottawatomie, Okfuskee, Seminole, McClain, Garvin, Hughes—Dr. J. A. Walker, Shawnee. (Term expires 1939.)

District No. 8: Craig, Ottawa, Mayes, Delaware, Wagoner, Adair, Cherokee, Sequoyah, Okmulgee, Muskogee—Dr. E. A. Aisenstadt, Picher. (Term expires 1939.)

District No. 9: Pittsburg, Haskell, Latimer, LeFlore, McIntosh—Dr. L. C. Kuyrkendall, McAlester. (Term expires 1939.)

District No. 10: Johnson, Marshall, Coal, Atoka, Bryan, Choctaw, Pushmataha, McCurtain—Dr. J. S. Fulton, Atoka. (Term expires 1939.)